

ANNUAL REPORT
OF THE
Department of Lands and Mines
OF THE
PROVINCE OF ALBERTA
FOR THE
Fiscal Year Ended March 31st
1947

PUBLISHED BY ORDER OF THE LEGISLATIVE ASSEMBLY



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1948

To the Honourable J. C. Bowen,
Lieutenant Governor of the Province of Alberta.

SIR:

I have the honour to submit the Report of the Department of Lands and Mines for the fiscal year ended March 31st, 1947.

I have the honour, to be, Sir,

Your obedient servant,

N. E. TANNER,
Minister of Lands and Mines.

Edmonton, January 24th, 1948.

TABLE OF CONTENTS

	Page
REPORT OF THE DEPUTY MINISTER	9
 I—LANDS ADMINISTRATION	
Report of the Provincial Lands Division	21
Report of the School Lands Division	26
 II—FORESTRY ADMINISTRATION	
Report of the Director of Forestry	32
Report of the Radio Superintendent	51
Report of the Northern Alberta Forest District	53
Report of the Crowsnest-Bow River Forest Reserve	57
Report of the Clearwater Forest Reserve	60
Report of the Brazeau-Athabaska Forest Reserve	62
Report of the Cypress Hills Forest Reserve	66
 III—FISHERIES AND GAME ADMINISTRATION	
Report of the Fish and Game Commissioner	70
Report of the Superintendent of Game	75
Report of the Superintendent of Fisheries	88
 IV—MINING LANDS ADMINISTRATION	
Report of the Mining Lands Division	96
 V—TECHNICAL DIVISION	
Report of the Technical Division	101
 VI—ACCOUNTS ADMINISTRATION	
Report of the Accountant	120
 VII—REGISTRATION DIVISION	
Report of the Registrar	137
 VIII—SPECIAL AREAS ADMINISTRATION	
Report of the Special Areas Board	141

GOVERNMENT OF ALBERTA
DEPARTMENT OF LANDS AND MINES

Resulting from the transfer on October 1st, 1930, of Alberta's natural resources from federal to provincial control, the Department of Lands and Mines was on this date brought into being by the Alberta Government. The general purpose of the new Department was to be one of supervision and management of the resources in question.

Ministers of the Department, responsible at different periods for this administration, appear as follows:

Hon. R. G. Reid, appointed October 2nd, 1930,
Hon. Hugh W. Allen, appointed July 10th, 1934,
Hon. Charles C. Ross, appointed September 3rd, 1935,
Hon. N. E. Tanner, appointed January 5th, 1937.

CHIEF OFFICERS
DEPARTMENT OF LANDS AND MINES

March 31st, 1947

Honourable N. E. Tanner	<i>Minister of Lands and Mines</i>
John Harvie	<i>Deputy Minister of Lands and Mines</i>
I. N. McKinnon	<i>Assistant Deputy Minister</i>
V. A. Wood	<i>Director of Lands</i>
F. D. Morrison	<i>Agent, Calgary Land Agency</i>
R. Cruickshank	<i>Agent, Peace River Land Agency</i>
H. H. Somerville	<i>Superintendent of Mining Lands</i>
H. Ingrey	<i>Inspector of Mining Rights</i>
T. F. Blefgen	<i>Director of Forestry</i>
J. A. Hutchison	<i>Acting Assistant Director of Forestry</i>
J. L. Janssen	<i>Chief Timber Inspector</i>
A. Earnshaw	<i>Radio Superintendent</i>
J. P. Alexander	<i>Supt. Crowsnest-Bow River Forest Reserve</i>
J. R. H. Hall	<i>Supt. Clearwater Forest Reserve</i>
D. Buck	<i>Supt. Brazeau-Athabaska Forest Reserve</i>
R. T. Mackey	<i>Chief Ranger, Cypress Hills Forest Reserve</i>
E. S. Huestis	<i>Fish and Game Commissioner</i>
D. E. Forsland	<i>Superintendent of Game</i>
H. B. Watkins	<i>Superintendent of Fisheries</i>
T. W. Dalkin	<i>Superintendent of the Technical Division</i>
J. L. Crawford	<i>Chief Inspector of Mines</i>
J. W. Patrick	<i>Accountant</i>
C. B. Kenway	<i>Registrar</i>

SPECIAL AREAS BOARD

Head Office: Hanna, Alberta

M. Baldwin	<i>Chairman</i>
D. M. Graham	<i>Secretary</i>
J. R. McBeath	<i>Member</i>
J. H. Todrick	<i>Supervisor, Edmonton</i>

SPECIAL DISTRICT AGENTS

J. Pokojoy	<i>Hanna</i>
A. D. McIntyre	<i>Oyen</i>
D. J. Wilson	<i>Consort</i>
R. H. D. Marguet	<i>Lomond</i>

THE PETROLEUM AND NATURAL GAS CONSERVATION BOARD

Head Office: Calgary

A. G. Bailey	<i>Chairman</i>
D. P. Goodall	<i>Member</i>

REPORT

OF THE

Department of Lands and Mines

1946-1947

HONOURABLE N. E. TANNER,
Minister of Lands and Mines,
Edmonton.

SIR:

I have the honour to submit the seventeenth annual report of the Department of Lands and Mines for the fiscal year ending March 31st, 1947.

The demand for the products of our natural resources which had seemingly reached a peak during war years has, if anything, increased to meet the needs of post war reconstruction and rehabilitation. This factor, together with our efforts to re-establish veterans on the land, has resulted in the Department transacting a greater volume of business during the past year than in any year since the Province took over the administration of its resources in 1930.

High prices coupled with the heavy demand for our products and good crop returns resulted in gross receipts for the year of \$6,196,130.56, an increase of \$880,053.55 over the previous year and an increase of \$866,956.65 over the previous peak year 1944-45. Net revenue on income account amounted to \$3,880,425.42 and surplus on income account was \$2,660,970.69, both figures being the highest so far recorded in the Department.

Production of lumber manufactured from timber cut on Provincial, School Lands and Forest Reserves during the year amounted to 352,348,345 f.b.m., an increase of 89,088,682 f.b.m. over the previous year. It is noteworthy that our production of manufactured lumber during the year 1935-36 only amounted to 89,919,530 f.b.m. The figures quoted are exclusive of other timber products such as railway ties, lath, mine timber, etc. The heavy increase in our present annual cut emphasizes the immediate necessity of having a forest inventory completed in order to ascertain what our annual cut should be on a sustained yield basis and, at the same time, provide the minimum forest cover to protect our agricultural industry.

Production of coal also set a new record, being 8,824,455 tons for the calendar year 1946 as compared with 7,801,248 tons mined in 1945. Coal unlike timber does not present a problem of depletion of reserves, but rather of our finding assured markets on a long term basis to enable the industry to become stabilized. Although production reached a peak during the past year reflecting the unusually favourable economic conditions enjoyed throughout the Dominion, the necessity of building up stock piles all over the country, which had been reduced to dangerously low levels by the big coal strike in the United States, was no doubt a contributing factor. We are still faced with the fact that once our financial economy resumes normal levels, the industry geared for high production during the war years may find itself again in the doldrums of the 1930's with no solution in the offing to prevent it. The report of the Royal Commission headed by Mr. Justice Carroll, appointed to investigate the coal industry in the Dominion, offers no remedy. While it recognizes the need for helping the coal industry by way of subventions to offset protection afforded eastern manufacturers under their

present tariff policy and also the need to provide a productive capacity which can be used in times of emergency, it offers no solution to the problem of stabilizing production.

Oil production continues to decline with the drop in Turner Valley. There were 7,138,532 barrels produced during the year, a decrease in production of 916,908 barrels from the previous year. However, due to increased prices, the value of oil produced was up \$1,178,377.00, the total production being valued at \$14,348,069.00. What is hoped may be a strike of major importance was the bringing into production of Imperial Leduc No. 1 well on February 13th, 1947. The well was completed in the Devonian limestone at a depth of 5,066 feet. Latest reports estimate production of approximately 200 barrels per day of a sweet oil with a gravity of around 40° A.P.I.

REVENUE

A surplus of \$2,660,970.69 on income account was shown for the fiscal year ending March 31st, 1947, as compared with \$2,302,915.07 for the previous year, an increase of \$358,055.62.

Expenditure on income account amounted to \$1,219,454.73, an increase of \$118,896.47, while net revenue was \$3,880,425.42, an increase of \$476,952.09. Main increases and decreases on revenue account were as follows:

	Increase	Decrease
FISHERIES ACT:		
Fish Royalty	\$ 19,994.87	.....
GAME ACT:		
Fur Tax	18,406.75	.....
Game Licenses	54,681.74	.....
LANDS AND GRAZING:		
Grazing Rentals, Fees, etc.		\$ 19,273.35
MINERAL TAXATION ACT:	196,710.71	
MINING LANDS:		
Coal Rentals, Fees, etc.		42,459.64
Coal Royalty	26,342.23	.....
Petroleum and Natural Gas, Fees, Rentals, etc.		80,084.04
Petroleum and Natural Gas, Royalties.		14,110.14
SCHOOL LANDS:		
Administration of School Lands, Reimbursements	25,000.00	.....
Interest on Sales		19,006.09
Petroleum and Natural Gas Royalties.	35,401.56	.....
Royalties, Leases, Rentals, etc.		16,367.82
TIMBER:		
Timber Rentals, Fees, Dues, etc.	255,742.79	.....
UNEARNED INCREMENT TAX	32,750.23	.....
MISCELLANEOUS	3,222.29	.....
NET REVENUE INCREASE		476,952.09
	<u>\$668,253.17</u>	<u>\$668,253.17</u>

LANDS ADMINISTRATION

Since the Government announced its land settlement plans for veterans in September, 1945, 909 Veterans' Agricultural Leases have been issued. There was some criticism of the delay in approving applications, but this was unavoidable as we were unable to obtain the services of a sufficient number of qualified Soil Inspectors, and also we had to train an inexperienced office staff, many of them returned veterans, to deal with the applications. This situation has now been remedied, and the work is progressing favourably. Officials administering the Veterans' Land Act rendered us valuable help in solving the inspection problem by having their own fieldmen carry out inspections of veterans' applications.

Civilian agricultural lease applications were only accepted from applicants who had resided continuously in Alberta since January 1st, 1944, and 283 leases were issued during the year. Many enquiries regarding Alberta's land settlement policy have been received from outside the Province, particularly from other parts of Canada and the United States.

The failure of Hartman Brothers to carry out their contract for clearing and breaking land for veterans in the Peace River area was a source of great disappointment. However, a contract was entered into with Lassiter's Limited in August, 1946, to clear and break 100,000 acres of Provincial land in the Wanham area, and it is hoped that some 35 half-section units will be available for settlement in the fall of 1947. Several hundred veterans have made application for these lands, and disposition is to be made by holding a draw.

Amendments to The Provincial Lands Act with respect to Civilian and Veteran Agricultural Leases passed at the 1947 session of the Legislature and assented to on March 31st, 1947, provided as follows:

- (a) Civilians as well as veterans may acquire title, free of charge, to the land at the end of the tenth crop year provided they have complied with the terms of the lease during the ten-year period.
- (b) On land leased in the raw state the lessee may acquire a title to the land any time after the fifth crop year by purchase at the original raw land value if the lease is in good standing and if the lessee has brought into a state of cultivation and made ready for crop the acreage required by the terms of the lease to be in crop in the tenth year. The lessee after the end of the sixth year may purchase the land under the same conditions for eighty per cent of the original raw land value, and for each succeeding year there will be a reduction of twenty per cent of the purchase price until at the end of the tenth year title will be issued free.

Where the land is under cultivation at the time of the granting of a lease, the lessee may exercise his rights to purchase in accordance with (b) above, or at the end of the fifth or sixth crop year, if he pays an amount fixed by the Minister in lieu of payment of additional crop shares.

In order to provide additional lands for disposition to veterans, an inspection has been made of all expired Cultivation and Grazing Leases before granting a renewal to determine if the land is essential to the lessee in order to maintain an economic farming unit. If it is found the lessee does not require the land, the lease is not renewed and the land is made available to veterans. In addition, veterans are permitted to transfer their Cultivation and Grazing Leases or Homestead Entries to Agricultural Leases in order to obtain title and to qualify for the grant of \$2,320.00 through the Veterans Land Act. Improved crop yields and better prices were reflected in an increase in the amount the Department collected from Cultivation and Grazing Leases on Provincial and School lands, which amounted to \$250,794.58, as compared with \$203,201.69 for the previous fiscal year. Eighty per cent of the crop share collected is refunded to the Municipal and Improvement Districts in which the lands are situated for school and municipal purposes.

GRAZING

The average price on all grades of cattle sold in the Calgary stock yards from July to December, inclusive, 1946, was 10.15c per pound as compared with 8.9c per pound for the same period in 1945. Grazing rentals for 1947 were raised in accordance with the scheme introduced in January, 1945, of basing grazing rentals on the productivity of the grazing land and the prevailing price of cattle.

Fifteen grazing reserves and community pastures were in operation at the end of the fiscal year. Ten of these were operated by associations holding long-term grazing leases; two by associations obtaining annual permits, and three were operated by the Department. Some 24,000 acres of land in Townships 11 and 12, Ranges 12 and 13, West of the 4th Meridian have been set aside for the residents of Bow Island in Forty Mile Municipal Districts for the formation of a community pasture.

SCHOOL LANDS

Approximately 500 Alberta veterans of World War II have been able to settle in the vicinity of their homes under the scheme whereby they were allowed to obtain veterans' agricultural leases on school lands which were withdrawn from the School Lands Endowment during the fiscal year and declared Provincial Lands. Provincial Lands are to be selected in lieu of the lands withdrawn from the School Lands Endowment.

Eight auction sales of School Lands were held during the year, and ten parcels of School Lands were sold at a total value of \$16,274.60.

FORESTRY

The heavy demand for building material and other forest products has continued throughout the year, and there is no sign of any slackening off. As forecast in our previous report, the cut during the past year was a record one with more man-power available following the release of men from the armed services.

Our most pressing problem at the present time is our lack of knowledge concerning our timber resources and not being in a position to determine the amount of timber that should be cut to place our forests on a sustained yield basis while at the same time providing sufficient forest cover to protect our agricultural industry from the ravages of soil erosion and drifting as well as a reduction in the water table.

At the recent session of the Legislature an amount of \$55,000.00 was included in the estimates to provide for the preliminary work in commencing a forestry survey of the Province and the taking of a forestry inventory. It is hoped that with the co-operation of the Dominion Government an aerial survey may be made of all our timbered areas and by interpretation of the aerial photographs, together with the information obtained by ground sampling parties, a worth-while inventory of our forest resources may be obtained.

Conservation measures are being put into practice at the present time. With the high prices being obtained for our lumber products, many applications are being received for immature stands of timber, which are, of course, being refused. It would appear that in the lumber industry, as in any industry, there are certain individuals and firms who are only interested in their immediate financial gain without any thought of keeping the industry on a stabilized basis by ensuring the availability of lumber supplies for the industry in the years to come and protecting our own domestic requirements.

All permits and berths granted under present regulations contain a clause enforcing a diameter limit in cutting operations. This places an additional burden on our inspection staff, which during the war years was sorely depleted, but is being built up again, and provision has been made for the appointment of three additional assistant timber inspectors in the ensuing year.

Most of the preparatory work has been completed in connection with the policy established of setting aside certain portions of the Province as Timber Areas in which no settlement is to be permitted. Lands to be reserved will be those on which there is already a considerable timber growth, together with certain sub-marginal lands unsuitable for agriculture but which offer real possibilities for afforestation. Selection of the areas has been carried out by our own personnel with the aid of officials of the Department of Agriculture and the Soils Department of the University.

Final stages have been reached in negotiations between the Dominion and the Province whereby joint action will be taken for the conservation of the forests and the protection of the watersheds on the east slope of the Rocky Mountains. This is a great step forward, as we have long felt that the Dominion Government should assume some responsibility in these matters which are of vital importance

not only to this Province, but to the Provinces of Saskatchewan and Manitoba as well if the waters of the Saskatchewan River and its tributaries are to be utilized to their fullest extent, particularly in the development of proposed prairie irrigation projects.

Conservation must be our keynote from now on, and it is only with the full co-operation of our own people that it can be put into practice successfully.

While a great deal is being done at the present time to educate the public in the need for protecting and conserving our forests, a more intensive programme of education is required to make our people conservation conscious. The spend-thrift days with their attendant blunders experienced by any country in its early development are behind us, and the public must be made aware that we have not unlimited resources, but we do have more than are required to maintain comfortably a population many times what it is now if we manage our resources wisely and take the long term viewpoint in formulating our policies. This applies not only to our forests but to our agricultural lands and other resources as well. Loss of revenue now and increased expenditures will be well repaid if future generations are to be considered.

Radio stations throughout the Province have rendered a much appreciated public service by broadcasting without remuneration warnings during the fire season to assist in the task of preserving our forests.

The Canadian Forestry Association, through their official publication "Forest and Outdoors" and with the co-operation of the Canadian Broadcasting Company, gave valuable assistance in publicizing the need for forestry conservation.

The Association also provided personnel and a truck equipped with a sound movie track which were utilized to conduct a series of educational lectures and film showings in settlements bordering the forest and wooded areas of the Province. By this method they were able to reach points inaccessible to their tree planting car, which made its usual annual tour through the Province.

It is gratifying to note that more farmers are taking advantage of our tree nursery to obtain seedlings for the establishment of windbreaks and wood lots on their farms, and the stage has now been reached where present facilities are inadequate to meet the demand. Additional land will have to be obtained for nursery purposes, and provision should not only be made for meeting farmers' requirements but also for providing the stock which will be necessary to inaugurate afforestation and reforestation projects.

The present high price of newsprint has created a market for the salvage of fire killed spruce as pulpwood, and some 16,853 cords have been shipped, mostly to the United States. Should the railway companies be successful in obtaining a thirty per cent increase in freight rates, this market would be lost. It is known, however, that one or more paper companies are investigating the feasibility of establishing a mill in the Province. Again we are handicapped in supplying information as to the potential quantities of pulpwood available through the lack of an up-to-date forest inventory.

The establishment of a pulp mill or mills in the Province, besides providing an outlet for fire killed timber, would also stimulate the development of farm wood lots, particularly on marginal and sub-marginal lands, and in time would provide the farmers with an additional source of income.

RADIO

Lack of experienced personnel made it impossible to put our whole radio system into operation as early as in previous years, and in some cases it was the end of April before some of the look-out towers could be manned. However, in spite of having to train new personnel, the detection system had a successful season with a minimum of delays due to equipment break-downs.

Considerable research work was carried out during the year in the compilation of data which would enable us to forecast the danger of fire hazard.

No fires occurred in isolated areas during the year which warranted the use of aircraft for the dropping of supplies and equipment with the parachutes developed last year. However, in an emergency fifty gallons of gasoline were dropped by parachute to one of the look-out towers late in the season.

A certain amount of test work was conducted throughout the year using frequency modulation in the 30 to 40 megacycle band, but more time will have to be devoted to this work before any specific recommendation can be made in regard to its use.

FISH AND GAME

Our angling and hunting facilities continue to attract sportsmen in ever increasing numbers both from within the Province and outside. There were big increases in angling permits, bird and big game licenses issued during the year.

Both the catch of commercial fish and the number of wild fur pelts taken show a substantial increase over the previous year, but due to lower prices received the value to the fishermen and trappers has decreased.

Close liaison has been maintained with the Fish and Game administrations in the other two Prairie Provinces with very satisfactory results. There is now a uniform fur royalty applicable to the three Prairie Provinces and a reciprocal agreement in effect whereby a person holding a resident bird license in any one province may receive a similar license in either of the other two provinces on the payment of the usual resident fee.

Following discussions between representatives of the three provinces a joint submission was made to Ottawa in regard to fish infestation problems.

A most successful meeting was held in Edmonton attended by representatives of the three Prairie Provinces, the Dominion Fisheries Branch and the Fisheries Research Board to study and report on fish inspection regulations.

The Alberta Fish and Game Association continues to give the Department valuable assistance in the conservation of our wild life both by its programme for educating the public and by its administration of campaigns for the destruction of pests. In recognition of its services the Government has agreed to give the Association an annual grant equal to the amount of the fifty cent membership fee the Provincial Association receives from its affiliated local associations, but the grant is not to exceed \$5,000.00 in any one year.

While angling has been fair in most parts of the Province, it has become evident that the policy of planting yearling fish in place of fingerlings in certain streams has not proved successful, and more attention will have to be given to the natural conditions in our rivers and streams to determine the chances of survival of fish planted. A very interesting study of conditions in the Elbow River has been made by Dr. R. B. Miller of the University of Alberta, and is included in the report of the Superintendent of Fisheries.

Commercial fishing still presents the problem of there being too many licenses taken out to permit the *bona fide* commercial fisherman to make a good living due to the poundage limitation. No doubt the situation will rectify itself in time as the price of fish comes down and the casual fishermen find they cannot meet operating expenses.

Due to the great demand for tullibee as fur farm feed, the catch last year amounted to 6,688,432 pounds, an increase of 3,313,909 pounds. Fur farmers have been warned that our lakes will not stand this rate of depletion, and that they will have to either reduce their breeding stock or find alternative sources of feed.

Fall shooting was somewhat disappointing, there being a shortage of ducks in some districts, and closed season had to be called on upland birds with the

exception of a two weeks' season for Hungarian Partridge in the south of the Province and a four weeks' season for Pheasants in the Eastern Irrigation District.

The operation of the Pheasant Hatchery at Brooks is showing satisfactory progress, and this year 5,542 young birds were placed in suitable areas with the assistance of the local Fish and Game Associations.

With the exception of Moose, our big game population is increasing steadily. Deer and Elk have become so numerous in some districts that they have been destroying farmers' feed supplies, and special permits have been issued authorizing them to be killed out of season.

A substantial increase in the number of wild fur pelts taken during the past year is particularly encouraging, as it would seem that our policy of fostering Registered Trap-lines is proving beneficial. Registered Trap-lines in force during the year were 3,023, an increase of 377 over the previous season. Most trappers of today treat their trap-line as a fur farm, and will not take off pelts in excess of the estimated material increase, thus instituting a programme of conservation.

Unfortunately, the price of furs dropped considerably during the year, and the value of 1,695,936 pelts produced was only \$1,566,308.00 as compared with \$3,002,419.00 for the previous year's yield of 1,411,571 pelts.

MINING LANDS

The hunt for oil still dominates the development of our mineral resources. Consumption of oil throughout the world is steadily increasing, and our own country is no exception. Agriculture, our primary industry, is becoming more and more mechanized, and the modern trend is one of conversion from coal to oil for fuel purposes.

New discoveries of oil have not kept pace with increased consumption. The need for protecting known reserves and establishing new ones is one of the most important motives in the international politics of today.

The new oil strike at Leduc mentioned earlier in this report has given added interest to an already extensive discovery and development programme being carried out in the Province at the present time, and temporarily at least has put our gas and coal reserves in the background as a potential reserve for the synthetic production of oil and other products.

The production and value of our chief minerals for the calendar year 1946 was as follows:

	Production	Value
Coal	8,824,455 tons	\$33,197,261.00
Petroleum	7,138,532 bbls.	14,348,069.00
Natural Gas	35,973,473 Mcf.	1,798,674.00*
Salt	31,683 tons	316,830.00

*Based on well-head valuation of 5c per Mcf.

In achieving our record coal production for the year, it is significant that strip mining operations accounted for 1,822,840 tons of the total tonnage mined, which represents an increase of 497,970 tons over the 1945 figures. This increased production can be attributed to the increased number of strip mines, improved efficiency of heavy mechanized equipment in use together with a greater demand for the type of coal produced through better methods being employed for its utilization.

The anticipated decline in Turner Valley production continues. However, during the year the Princess and Lloydminster fields were extended, and production of petroleum outside of Turner Valley shows an increase of 132,742 barrels over the previous year. This increase together with the possibilities of the Leduc strike gives rise to the hope that our progressive drop in production since 1942 will soon end.

Substantial additional gas reserves were proved up in an area east of the previously known Kinsella Field, in the Princess Field and in the Pinhorn Area near the United States border. Should the present world-wide search for additional oil reserves and more particularly on this continent be not successful, our gas reserves will become increasingly important as a foundation for future industrial expansion in the realm of synthetic production of gasoline, oil and other hydrocarbon products.

The following statistics are pertinent to the extensive exploration and development work now being undertaken in the search for oil and gas:

FOOTAGE DRILLED DURING 1946

Turner Valley	77,997
Other Oil Development	64,759
Gas Development	83,015
Wildcat	176,149
	<u>401,920</u>

Leases and reservations in force as at March 31st, 1947:

	Number	Acres
Petroleum and Natural Gas Leases	2,543	1,067,752
Petroleum and Natural Gas Drilling Reservations	3	29,714
Reservations of P. & N.G. Rights for Geological and/or Geophysical examination	69	7,408,391

NOTE: Information as to footage drilled was taken from the report on the Alberta Petroleum Industry for the year 1946 as compiled by The Petroleum and Natural Gas Conservation Board which gives detailed statistics of production and wells drilled.

Sixty-seven quarrying leases containing an area of 1,393 acres were active at the close of the fiscal year. There were 249,054 cubic yards of sand and gravel and 89,688 cubic yards of limestone and shale reported as being extracted from Provincial Lands under lease during the calendar year 1946. In addition, 36 permits were issued during the fiscal year authorizing the extraction of 63,049 cubic yards of sand and gravel.

TECHNICAL DIVISION

During the past year, 1,205 Notifications were issued covering an area of 169,935,499 acres, a decrease of 28 Notifications and a reduction in acreage of approximately 3,500 acres from the previous year. It is not anticipated that there will be any increase in this phase of the work until agricultural lease holders take advantage of the amendments to The Provincial Lands Act passed at the recent session of the Provincial Legislature, which provide for the lessees obtaining patent to their land subject to certain conditions any time after the fifth crop year.

Details of Notifications issued since the inception of the Department:

NOTIFICATIONS ISSUED

Fiscal Year	Number of Notifications	Area, Acres
1930-31	23	3,019,710
1931-32	784	111,424,478
1932-33	1,260	178,887,233
1933-34	1,106	165,224,553
1934-35	2,006	324,611,398
1935-36	2,965	433,529,126
1936-37	2,231	325,615,379
1937-38	2,266	382,382,437
1938-39	2,874	517,435,896
1939-40	2,097	301,431,972
1940-41	2,058	295,649,119
1941-42	1,563	229,566,606
1942-43	1,516	229,699,519
1943-44	1,660	249,371,901
1944-45	1,663	296,393,477
1945-46	1,233	183,425,587
1946-47	1,205	169,935,499
TOTALS	28,510	5,397,603,890

There has been a heavy increase in general draughting work, preparation of legal descriptions, and searching of titles. Some 1,189 legal descriptions were prepared for agricultural leases alone, the great majority of which were for veterans wishing to re-establish themselves on the land.

In order to keep pace with the ever extending exploration for oil and gas in the Province, it was necessary to search the mineral titles in 277 townships and prepare plans on linen cloth for the records. It will be appreciated that this type of work is most exacting and demands the utmost care being taken to ensure accuracy in view of the high stakes involved.

Residents of the Special Areas continue to take advantage of the policy formulated for exchange of lands. Eighty exchanges were completed during the year, 23 were approved by Order in Council, and title taken to the applicant's land by the Crown, and upon compliance with the one year's residence proviso, notification will issue for the Crown lands.

Progress in survey work continues to be most disappointing. Surveyors throughout the Province have all the work they can handle in cities and nearby rural areas, and are not desirous of undertaking work in outlying districts. Through the courtesy of the Director of Water Resources, the services of one of his surveyors was obtained to carry out a survey in Townships 81 and 82, Range 7, West of the 6th Meridian. Unfortunately, due to difficult terrain and bad weather conditions, the party was only able to complete a survey of 72 quarter sections in Township 81. Through the Department of Public Works the services of a surveyor were obtained to survey for administration purposes the accrued area around Beaver Hill Lake in Townships 51, 52 and 53, Ranges 17 and 18, West of the 4th Meridian. The survey was completed, but the preliminary plans have not yet been received.

Particulars of various aerial surveys completed in 1946 will be found in the report of the Technical Division. The need for this type of survey is becoming more and more evident with the progressive development of our natural resources. There is already a demand for topographical and geological maps covering unsurveyed areas and, as stated previously, aerial survey is the only method by which a forest inventory may be taken in time to be of real value.

Trouble is still being experienced in obtaining a supply of new maps. It was hoped that we would have had a number of the new eight-mile map of the Province, but due to material shortages and other difficulties the printers have been unable to make delivery. However, it is anticipated that our orders for both the eight and sixteen mile maps will be completed before the end of the next fiscal year.

MINERAL TAXATION

The new oil strike at Leduc and reports of fabulous prices paid to private holders of mineral rights has focussed the attention of all surface owners on the status of minerals underlying their holdings.

The Department as well as the Land Titles Offices has been deluged with enquiries as to ownership of minerals. Old settlers, their families and others who acquired land from them find it hard to understand why lands acquired from the Dominion Government subsequent to Oct. 31st, 1887, did not carry the right to win the mines and minerals, while settlers purchasing land for several years afterwards from companies such as the Hudson's Bay Company and the Canadian Pacific Railway acquired the mineral rights; the reason being that all dispositions of land by the Dominion Government after Oct. 31st, 1887, reserved the mines and minerals to the Crown, companies such as the Hudson's Bay Company, the Canadian Pacific Railway Company and other companies who obtained large land grants including mineral rights from the Crown in the early days, continued to sell both the surface and mineral rights for several years

afterwards before adopting a similar policy of reserving the mines and minerals to themselves in all their sales of land.

The Leduc strike has had a very noticeable effect on the collection of the acreage tax payable under The Mineral Taxation Act. Most people are now anxious to protect their mineral holdings, and \$231,062.93 was received from this tax during the fiscal year as compared with \$160,126.13 for the previous year, the levy being the same in both instances—1½c per acre.

Pursuant to the provisions of The Mineral Taxation Act, a levy of 6 mills was authorized by Order in Council for 1946 on minerals assessed within a producing area. The following were established as producing areas under the act: Turner Valley, Viking, Kinsella, Vermilion, Medicine Hat-Redcliff, Crowsnest-Pincher, Lethbridge, Cascade.

An amount of \$725,742.91 was received during the year from taxes levied on the mineral assessments in the producing areas, but it should be noted that this sum represents collections on both the 1945 and 1946 levies, as the 1945 tax notices were not sent out in time to be collected during the previous fiscal year.

A new act, "The Mineral Taxation Act, 1947," was passed at the recent session of the Legislature amending and consolidating the previous one. A resumé of the most important features of the new Act will be found in the report of the Technical Division.

UNEARNED INCREMENT TAX

By an amendment passed at the recent session of the Legislature to Section 86(a) of The Provincial Lands Act which relates to the application of the Unearned Increment Tax, provision was made for making assignments of reservations of petroleum and natural gas rights or any other form of agreement for the development of a natural resource subject to the 10% tax. The sum of \$37,598.66 was collected during the year, including \$1,398.14 on Royalty Agreements. The amount collected shows a substantial increase over the \$4,333.56 received during the previous year. However, it should be taken into consideration that the tax was not levied on assignments dated before April 6th, 1946, if accompanied by affidavits verifying the date of the assignments and submitted for registration in the Department before June 30th, 1946.

REGISTRATION

The heavy volume of business transacted is reflected in the report of the Registrar giving details of the number of letters mailed and received. Good progress is being made in transcribing old Dominion township registers to loose leaf registers. A new type of cardex card has been designed, and the work of changing over to the new cards is proceeding satisfactorily.

During the year, 199 films were exposed and checked by our recordak operator in the photographing of files. This shows a decided improvement in the amount of work completed.

SUMMARY OF OIL PRODUCTION IN ALBERTA BY CALENDAR YEARS
Quantities in Barrels of 35 Imperial Gallons

	1914-21	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	Total
TURNER VALLEY:																											
Limestone:																											
Oil Wells										40,900	63,969	52,409	49,601	61,249	61,302	220,552	1,787,421	5,999,970	7,162,962	8,097,414	9,443,143	9,621,326	8,940,198	7,837,442	6,991,181		
Gas Wells				1,689	169,008	203,725	284,595	410,448	908,411	1,275,202	1,281,341	802,108	717,154	734,891	650,149	451,396	311,549	150,542	88,101	75,602	88,064	74,587	46,465	37,427	8,398	5,928,444	81,136,395
Natural Gasoline	76	9,237	8,060	13,128	8,951	7,283	5,854						185,781	414,324	496,681	602,360	657,169	531,434	296,787	274,172	293,122	302,216	461,169	448,186	412,540	434,210	5,862,740
Crude Oil recovered from above Limestone	56,599	6,559	1,943	2,932	2,926	2,609	38,808	70,910	73,181	50,897	26,936	21,757	23,915	22,307	18,903	13,011	10,589	9,192	8,431	7,309	6,014	5,806	4,865	3,209	3,932	8,918	502,458
Total	56,675	15,796	10,003	17,749	180,885	213,617	329,257	481,358	981,592	1,366,999	1,372,246	876,274	976,451	1,232,771	1,227,035	1,287,319	2,766,728	6,691,138	7,556,281	8,454,497	9,830,343	10,003,935	9,452,697	8,326,314	7,422,061	6,371,572	87,501,593
ARMELGRA—Heavy Crude																							462				462
CONRAD—Heavy Crude																								24,733	143,696	212,645	381,074
DEL BONITA—Light Crude												562	546	561	195	1,480		615	2,073	3,444	4,393	1,653	1,882	9,366	4,091	2,064	32,925
DINA—Heavy Crude									2,839	1,873	10,362						1,642	6,383	3,633	4,746	2,894	2,780	200				37,352
KEHO—Light Crude													803	152													955
LLOYDMINSTER—Heavy Crude																			348	1,648	416	477		6,296	28,321	76,187	116,333
MOOSE DOME—Light Crude																	655	3,064	2,074	351			2,640	2,205	628	8,977	
PRINCESS—Heavy Crude																			515	19,587	10,478		340	13,815	63,377	64,953	173,065
RAM RIVER—Heavy Crude																								207			207
RED COULEE—Light Crude									1,328	53,917	65,066	34,315	29,708	20,276	20,536	16,262	13,790	13,818	13,022	12,177	11,626	10,107	8,928	3,835		1,140	329,851
SKIFF—Heavy Crude							529	222	1,432	3,731				510	1,564	310											8,298
TABER—Heavy Crude																	600	15,098	3,720		5,600	29,819	88,735	148,638	135,000	206,925	634,135
TILLEY—Heavy Crude																								5,718	593		14,513
VERMILION—Heavy Crude																			202	10,817	22,051	56,819	93,258	234,603	238,358	183,946	840,054
WAINWRIGHT—Heavy Crude						5,981	2,526	7,952	12,332	9,739	7,142	7,003	5,276	11,779	14,638	15,057	13,459	12,985	11,624	7,527	11,733	14,510	18,136	17,154	16,472	15,114	238,139
JUMPING POUND																								3,471	2,428		5,899
PROVOST																										1,558	1,558
Total						5,981	3,055	8,174	17,931	69,260	82,570	41,880	36,333	33,278	36,933	33,109	30,146	51,963	37,211	40,710	78,300	132,361	221,851	462,414	633,379	766,960	2,823,797
ALBERTA TOTALS	56,675	15,796	10,003	17,749	180,885	219,598	332,312	489,532	999,523	1,436,259	1,454,816	918,154	1,012,784	1,266,049	1,263,968	1,320,428	2,796,874	6,743,101	7,593,492	8,495,207	9,908,643	10,136,296	9,674,548	8,788,726	8,055,440	7,148,532	90,325,390
*VALUATIONS	\$ 218,200	\$ 64,047	\$ 41,333	\$ 88,095	\$ 717,271	\$ 914,707	\$1,529,477	\$1,727,824	\$3,424,021	\$4,557,473	\$3,977,788	\$2,606,907	\$2,694,310	\$3,031,446	\$2,856,029	\$2,918,730	\$4,913,960	\$8,639,488	\$9,289,580	\$10,503,249	\$13,809,708	\$15,517,266	\$15,724,518	\$14,468,061	\$13,169,692	\$14,348,069	\$151,801,249

NOTE: The dividing line between oil wells and gas wells is now on the basis of the gas/oil ratio of 30 Mcf. per barrel. Commencing with 1946 no division is being made in limestone production between oil and gas wells.

*Valuations are based on sales by primary producers.

Provincial and School Lands Administration

REPORT OF THE DIRECTOR OF LANDS, V. A. WOOD

April 1st, 1946, to March 31st, 1947

Since the Government Announcement of Plans for the Establishment of Veterans on Provincial Lands was published on September 17, 1945, 909 Veteran Agricultural Leases have been issued. The arrangement whereby veterans of World War II, who resided in Alberta at the time of enlistment may make application for Agricultural Leases for School Lands, was discontinued on the 31st of March, 1947. This decision was made as most of the desirable and available School Lands in the well settled areas of the Province have been taken and also as the opportunity to make application has been available to the veterans for over a year.

In addition to the Veteran Agricultural Leases, 283 Civilian Agricultural Leases were issued during the fiscal year. The Department continued the practice of only accepting Civilian Agricultural Lease applications from persons who have resided continuously in the Province of Alberta since the 1st of January, 1944.

During the year a large number of inquiries were received from residents in other parts of Canada and the United States regarding the Alberta Land Settlement Plan. A few inquiries were also received from the British Isles and other European countries.

The policy of accepting more than one application for Agricultural Leases for the same parcel of land and of making disposition of the land by holding a draw proved quite satisfactory to the applicants and to the Department.

Delays in connection with the issue of Agricultural Leases were unavoidable due to inadequate office and inspection staff, the necessity of obtaining individual soil reports for each application and also in having to obtain Orders in Council to transfer lands from the School Endowment where veterans applied for School Lands. However, the Agricultural Lease staff and the Soil Inspection staff was more than doubled during the fiscal year, and every effort has been made to cut unnecessary delays to a minimum. The Veterans' Land Act officials rendered valuable assistance by instructing their fieldmen to assist in the inspections of Veteran Agricultural Lease applications.

The original contract made in 1945 with Hartman Brothers for the clearing and breaking of land in the Peace River district was cancelled. However, a new agreement was entered into with Lassiter's Limited in August, 1946, to clear, break and prepare for seed 100,000 acres of Provincial Land. Thirty-five half section units have been cleared in Township 79, Ranges 2, 3 and 4, West 6th Meridian. Several hundred veterans have indicated by letter they wish to settle in this area, and these lands will be made available to certified veterans of World War II and disposition will be made by holding a draw. Further draws will be held as more parcels of land become available.

The following are a few of the important changes made during the fiscal year for the benefit of veterans:

Where a Cultivation and Grazing Lease expires, before granting a renewal an inspection is made to determine whether the land is essential to the lessee to maintain an economic farm unit. Where it is found the land is not essential to the lessee it is made available for disposition.

Veterans are permitted to transfer their Cultivation and Grazing Leases or homestead entries to Agricultural Leases. This would enable the veteran to apply for the grant of \$2,320.00 through The Veterans' Land Act.

Where veterans use moneys obtained from The Veterans' Land Act they are granted an extension of time not exceeding eighteen months, to go into residence without payment of a penalty.

Wheat seeding was completed by the 1st of June and harvesting was practically completed by the 26th of October, which is one week earlier than last year. There was some hail damage during the year and some losses of crops due to saw-fly in the south and southeastern sections. The average yield of wheat for the Province was 18.9 bushels per acre, which is an improvement over last year. This increase in yield was reflected in the amount paid as Departmental crop share on Cultivation and Grazing Leases issued on Provincial and School lands which amounted to \$250,794.58 as compared to \$203,201.69, for the previous fiscal year ending March 31st, 1946.

A four-year Wheat Agreement between Canada and the United Kingdom was consummated on the 25th of July, 1946. Under the Agreement, Canada is guaranteed a fixed price for stipulated amounts of wheat sold to the United Kingdom of \$1.55 per bushel for the first two years and a minimum of \$1.25 per bushel for the third year and \$1.00 per bushel for the fourth year. All prices are basis No. 1 Northern at Fort William.

On the 1st of August, 1946, the Canadian Wheat Board fixed the wheat price at \$1.35 per bushel, basis No. 1 Northern at Fort William and Vancouver. Delivery quotas were again in effect, but restrictions were removed for wheat deliveries on the 22nd of November, 1946, and for oats and barley on the 27th of February, 1947.

The Department, as landlord, holding participation certificates for wheat delivered continued throughout the year to receive payments as follows from the Canadian Wheat Board:

1941	\$ 55.50
1942	64.94
1943	1,240.27
1945 (Crop for Alsike Clover)	210.05
Total	\$1,570.76

In November, 1946, the Canadian Wheat Board declared a 10c additional adjustment payment for all wheat delivered between August 1, 1945, and July 31, 1946. Up to March 31st the Department, as landlord, received: Adjustment payment on Producer's Certificates, \$5,841.86.

The Department, as landlord, also received the following equalization payments from the Wheat Board for barley delivered: Barley equalization final payment 1944 crop, \$821.90.

Several line grain companies declared a patronage dividend in connection with the 1945 crop and this Department participated as follows: Patronage dividends, \$584.23.

The above payments cover grain delivered from Provincial Land, School land and lands within the Special Areas.

Where crop share payments were made in cash instead of by grain storage tickets the lessee has been debited for the adjustment and equalization payments which are due to the Department as landlord.

Land Agencies were continued at Calgary and Peace River, and Sub-Agencies were maintained at Athabaska, Bonnyville, Grande Prairie, Hines Creek, Lac La Biche and Rocky Mountain House. Nine temporary Sub-Agencies were held throughout the Province and 97 items of business were transacted.

Mr. M. Gossip, the Agent of Provincial Lands at Calgary for the past number of years, was superannuated July 31st. Prior to the transfer of the natural resources to the Province, Mr. Gossip was in the Dominion Service and was the Assistant Agent in the Dominion Land Office, Calgary, at the time of the transfer.

Mr. D. B. Rees, who was in the Mining Lands Division of this Department prior to his enlistment in the armed forces, was appointed Agent of Provincial Lands in the Calgary Office on Jun 10th, but resigned on August 20th to accept another position.

On September 16th Mr. F. Morrison of the Technical Division of this Department, was appointed Agent of Provincial Lands at Calgary. Mr. Morrison has been with the Department of Lands and Mines since the transfer of the natural resources to the Province, and was in the Dominion Land Office, Edmonton, prior to that time.

The following is a summary of the Inspection work of this Branch:

SOIL INVESTIGATIONS:

Requests outstanding at April 1st, 1946	503
Requests called during fiscal year	1,997
Reports received during fiscal year	1,885
Requests outstanding at March 31st, 1947	615

PROVINCIAL, GRAZING AND SCHOOL LANDS INSPECTIONS:

Requests outstanding at April 1st, 1946	504
Requests called during fiscal year	1,514
Reports received during fiscal year	1,345
Requests outstanding at March 31st, 1947	673

A large number of the inspections outstanding accumulated during the winter and spring months when the inspectors were out of the field.

COLLECTION INSPECTIONS

The Inspector of Collections was in the field from the 20th of March to the 30th of November. Approximately \$15,000.00 in past due accounts was collected. The reduction from the amounts collected in previous years reflects the improvement in the outstanding accounts.

Owing to the greatly improved standing of the Crop Share and School Lands Sale Accounts, a considerable portion of the season was spent investigating and reporting on expiring Cultivation and Grazing Leases.

The following is a summary of other business transacted during the fiscal year:

Orders in Council:

Order in Council No. 1033-46—The Civilian Agricultural Lease area enlarged to include the area North and West of the Athabaska River.

Order in Council No. 1075-46—New Regulations governing the issue of Grazing Permits on Provincial and School Lands.

Order in Council No. 1115-46—Regulations for the issue of Cultivation Permits on Provincial and School Lands.

Order in Council No. 1475-46—Granting authority for a Cultivation Lessee to assign the Lease with the consent of the Minister. (This Order in Council only applies to leases in the southeastern section of the Province.)

Order in Council No. 1483-46—Waiving payment of all hail insurance in connection with leases on Crown Lands.

Order in Council No. 2058-46—New Civilian Agricultural Lease Regulations.

Order in Council No. 2059-46—New Veteran Agricultural Lease Regulations.

The Provincial Lands Act was amended during the current session of the Legislative Assembly and was assented to on March 31st 1947. Most of the amendments affecting the Lands Branch pertain to the Agricultural Lease

Regulations, and these Regulations, therefore, will be amended accordingly by Order in Council.

The following is a summary of the important amendments which will benefit the agricultural lessee:

1. The agricultural lessee is not required to commence residence during the winter months immediately following the issue of the lease, namely November, December, January, February and March.
2. Where the agricultural lessee is an alien at the time of the granting of the lease he is now granted seven years to become a Canadian citizen instead of six years as formerly.
3. Where the land is in cultivation at the time of the granting of a lease the Minister is granted authority to fix as rental a share of the crop greater than one-eighth during each of the first seven years of the lease.
4. The Minister is granted authority to include in the Agricultural Lease a purchase agreement that may be exercised by the lessee at any time after the fifth crop year and the purchase price will be reduced by 20% each year thereafter until the tenth year when notification of title is issued free of charge. The purchase agreement can only be exercised when the lease is in good standing.

	No.	Acres
ACCRUED AREA LEASES (Provincial Lands):		
Leases in force at April 1st, 1946	457	33,893.16
Leases issued during fiscal year	137	10,630.92
Leases cancelled during fiscal year	50	2,542.42
Leases in force at March 31st, 1947	544	41,981.66
AGRICULTURAL LEASES—CIVILIAN (Provincial Lands):		
Leases in force at April 1st, 1946	950	178,504.40
Leases issued during fiscal year	283	50,226.73
Leases cancelled during fiscal year	155	29,691.22
Leases in force at March 31st, 1947	1,078	199,039.91
AGRICULTURAL LEASES—VETERAN (Provincial Lands):		
Leases in force at April 1st, 1946	38	8,663.87
Leases issued during fiscal year	906	242,614.54
Leases cancelled during fiscal year	35	8,277.73
Leases in force at March 31st, 1947	909	243,000.67
LICENSES OF OCCUPATION (Provincial Land):		
Licenses in force at April 1st, 1946	122	2,827.06
Licenses issued during fiscal year	12	236.27
Licenses cancelled during fiscal year	2	106.25
Licenses in force at March 31st, 1947	132	2,957.08
MISCELLANEOUS LEASES (Provincial Land): (Recreational, Irrigation Leases, Church Sites, Exhibition Sites, Sawmill Sites, Wharf Sites, etc.)		
Leases in force at April 1st, 1946	138	10,313.13
Leases issued during fiscal year	22	829.44
Leases cancelled during fiscal year	5	759.15
Leases in force at March 31st, 1947	155	10,383.42
TOWNSITE LEASES (Provincial Land):		
Leases in force at April 1st, 1946	8	.....
Leases issued during fiscal year .....	.....	.....
Leases cancelled during fiscal year .....	.....	.....
Leases in force at March 31st, 1947	8	.....
MINERAL SURFACE LEASES (Provincial Land):		
Leases in force at April 1st, 1946	15	.....
Leases issued during fiscal year	2	.....
Leases cancelled during fiscal year .....	.....	.....
Leases in force at March 31st, 1947	17	.....
FUR FARM LEASES (Provincial Lands):		
Leases in force at April 1st, 1946	12	.....
Leases issued during fiscal year	1	.....
Leases cancelled during fiscal year	2	.....
Leases in force at March 31st, 1947	11	.....
SPECIAL AREAS—IRRIGATION LEASES (Provincial Lands):		
Leases in force at April 1st, 1946	4	628.00
Leases issued during fiscal year .....	.....	.....
Leases cancelled during fiscal year .....	.....	.....
Leases in force at March 31st, 1947	4	628.00
6 AND 10 YEAR CULTIVATION AND GRAZING LEASES (Provincial Lands):		
Leases in force at April 1st, 1946	368	67,546.99
Leases issued during fiscal year	11	1,604.42
Leases cancelled during fiscal year	111	20,102.48
Leases in force at March 31st, 1947	268	49,048.93

	No.	Acres
21-YEAR CULTIVATION AND GRAZING LEASES		
(Provincial Lands):		
Leases in force at April 1st, 1946	7	2,070.93
Leases issued during fiscal year .....	.....	.....
Leases cancelled during fiscal year .....	.....	.....
Leases in force at March 31st, 1947	7	2,070.93
SPECIAL AREAS—6 YEAR CULTIVATION AND GRAZING		
LEASES (Provincial Lands):		
Leases in force at April 1st, 1946	481	150,696.08
Leases issued during fiscal year	257	72,076.19
Leases cancelled during fiscal year	20	5,554.46
Leases in force at March 31st, 1947	718	217,217.81
SPECIAL AREAS—20 YEAR CULTIVATION AND		
GAZING LEASES (Provincial Lands):		
Leases in force at April 1st, 1946	233	63,701.34
Leases issued during fiscal year	33	8,204.20
Leases cancelled during fiscal year	13	4,599.59
Leases in force at March 31st, 1947	253	67,305.95
NEW 6-YEAR CULTIVATION LEASES (South-eastern portion		
portion of Province) (Provincial Lands):		
Leases in force at April 1st, 1946	79	16,885.46
Leases issued during fiscal year	10	2,227.60
Leases cancelled during fiscal year	2	320.00
Leases in force at March 31st, 1947	87	18,793.06
PROVINCIAL LANDS SALES:		
Sales in force at April 1st, 1946	229	13,944.73
New sales during fiscal year	153*	8,815.60
Sales cancelled during fiscal year	8	622.08
Sales patented during fiscal year	163†	7,696.66
Sales in force at March 31st, 1947	211	14,441.59
*Includes 48 lot sales—no area given.		
†Includes 40 lot sales—no area given.		
RIGHT OF ENTRY:		
Right of Entries in effect April 1st, 1946	52	.....
Applications received	30	.....
Right of Entries cancelled	5	.....
Applications pending as at March 31st, 1947	10	.....
Right of Entries in effect at March 31, 1947	67	.....
CANCELLATIONS (Homesteads and Soldier Grants:)		
Number	262	.....
NOTIFICATIONS FOR TITLE:		
Applications on hand at April 1st, 1946	1123	.....
Applications received during fiscal year	322	.....
Notifications for title issued during fiscal year	752	.....
Applications on hand (checked and waiting completion)	693	.....
Squatter's Permits issued	354	.....
Miscellaneous Permits for building sites on trap lines issued	297	.....
Grazing Permits issued	2244	431,038.28
Cultivation Permits issued	193	5,083.50
Hay Permits issued	1558	.....
Total number of tons, 17,267.		
Hay Seizures	5	.....
Total number of tons, 47.		
Assignments registered (Leases, Permits and Sales)	255	.....

GRAZING

The new method of calculating the Grazing Rental, inaugurated in 1945, based on the productivity of the grassland and prevailing price of cattle has been generally accepted by the ranches as the most equitable rental system. The average price of all grades of cattle on the Calgary stockyard from July to December inclusive was 10.15c per pound as compared with 8.90c for the same period last year. Therefore the grazing rentals were raised in accordance with the formula for calculating the rental.

During the fiscal year Grazing lessees were permitted to obtain permits to regrass old cultivated areas or cultivate the same for the purpose of growing greenfeed. An annual rental is charged ranging from 25c per acre to 50c per acre, according to the grazing zones which are based on the carrying capacity of the land. Where a lessee regrasses he is only required to obtain a permit for the year in which the land is seeded, but where the lessee grows greenfeed, he is required to obtain a permit each year.

Fifteen Departmental Grazing Reserves and Community Pastures were in operation during the year. There has also been approximately 24,200 acres in Townships 11 and 12, Ranges 12 and 13, West of the 4th Meridian, set aside

for the residents of Bow Island and Forty Mile Municipal Districts for the formation of a community pasture.

The following is a summary of the Grazing Reserves and Community Pastures: *Reserves with Permanent Caretakers:*

Vauxhall Provincial Grazing Reserve — Area, 165,500 acres; number of permits issued, 94—covering 2,077 cattle, 52 horses and 10,227 sheep.

Blackfoot Provincial Grazing Reserve—Area, 38,000 acres; number of permits issued, 114—covering 1,851 cattle and 252 horses.

Twin River Provincial Grazing Reserve—Area, 20,500 acres; number of permits issued, 61—covering 1,275 cattle and 23 horses.

Reserves handled by Association who are responsible for upkeep and for care of the stock:

Tulliby Lake Provincial Grazing Reserve—Area, 22,000 acres; number of permits issued, 1—covering 275 cattle.

Bowell West Provincial Grazing Reserve—Area, 8,600 acres; number of permits issued, 1—covering 178 cattle.

GRAZING RESERVES UNDER LONG TERM LEASES BY ASSOCIATION

	Acres
Castle River Reserve	4,496
Fir Grove Reserve	3,591
Ross Lake Reserve	4,473
Barnwell Reserve	5,466
M.D. of Eureka Reserve	3,355
Pipeline Reserve	22,696
Rocky Coulee Reserve	4,432
Many Island Lake Reserve	15,448
Hilda District Reserve	24,781
Bluefield Reserve	11,602

LONG TERM GRAZING LEASES

	No.	Acres
Leases in force April 1st, 1946:		
Lands Branch Leases	1,932	2,634,112
Special Areas Leases	1,214	1,766,518
Total	3,146	4,400,630
Leases issued during fiscal year	615	650,248
Area added to existing Leases during fiscal year		64,495
Leases cancelled during fiscal year	511	524,719
Area withdrawn from existing leases during fiscal year		62,172
Leases in force March 31st, 1947:		
Lands Branch Leases	1,911	2,622,253
Special Areas Leases	1,339	1,906,229
Total	3,250	4,528,482

The above acreage for grazing leases include small areas of school lands, as school lands may be included in a grazing lease where not less than two sides adjoin or are adjacent to the tract of Provincial land to be leased.

Details pertaining to the revenue in connection with the Administration of Provincial Lands may be found in the report of the Accounting Division of this Department.

SCHOOL LANDS

During the fiscal year 802 parcels of School Lands were withdrawn from the School Endowment and declared Provincial land in order that Veteran Agricultural leases might be issued. This means that approximately five hundred Alberta Veterans of World War No. 2 have been able to settle in the vicinity of their homes on agricultural leases. Now that the acceptance of Veteran Agricultural Leases for School Lands has been discontinued, Provincial lands will eventually be selected in lieu of the lands transferred from the school endowment.

Due to good crops in most parts of the Province and good prices for grain and live stock, collections have been very good, and most of the purchase and rental accounts are now in good standing.

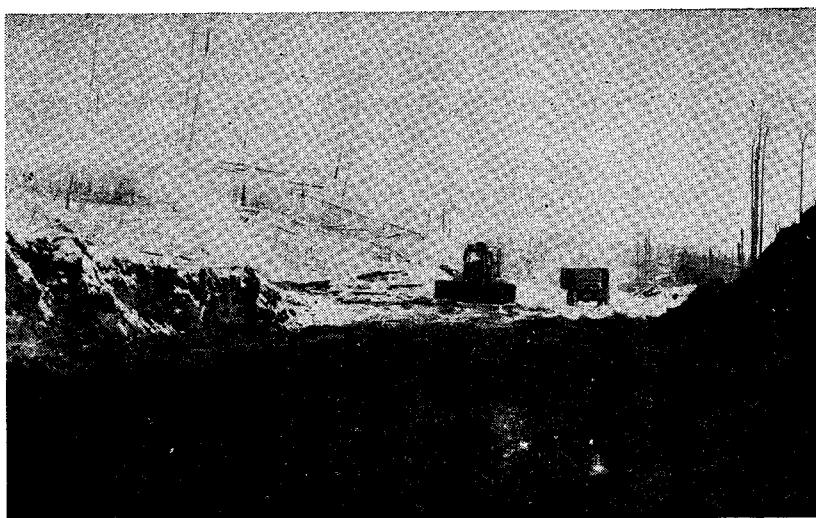
Eight auction sales of land were held, and ten parcels of School Lands were sold at a total of \$16,274.60.

The total revenue received on School Lands sales amounted to \$192,507.62, made up as follows: Principal, \$143,103.52; interest, \$49,404.10; total, \$192,507.62.

The following is a summary of other School Land business transacted:

School Land Sales active as at April 1st, 1946	779	
New School Land Sales during fiscal year	10	
School Land Sales cancelled	29	
School Land Sales patented	248	
School Land Sales in force at March 31st, 1947	512	
MISCELLANEOUS LEASES (School Lands):		
	No.	Acres
Leases in force at April 1st, 1946	69	2,398.08
Leases issued during fiscal year	8	292.57
Leases cancelled during fiscal year	2	3.00
Leases in force at March 31st, 1947	75	2,687.65
LICENSES OF OCCUPATION (School Lands):		
Licenses in force at April 1st, 1946	47	498.87
Licenses issued during fiscal year		
Licenses cancelled during fiscal year	4	8.75
Licenses in force at March 31st, 1947	43	490.12
6 AND 10-YEAR CULTIVATION AND GRAZING LEASES (School Lands):		
Leases in force at April 1st, 1946	1560	294,685.30
Leases issued during fiscal year	8	1,753.13
Leases cancelled during fiscal year	155	28,962.30
Leases in force at March 31st, 1947	1413	267,476.13
IRRIGATION LEASES (School Lands):		
Leases in force at April 1st, 1946	1	160.00
Leases issued during fiscal year		
Leases cancelled during fiscal year	1	160.00
Leases in force at March 31st, 1947		
SPECIAL AREAS—6-YEAR CULTIVATION AND GRAZING LEASES (School Lands):		
Leases in force at April 1st, 1946	81	20,001.63
Leases issued during fiscal year	8	1,603.79
Leases cancelled during fiscal year	2	318.00
Leases in force at March 31st, 1947	87	21,287.42
Grazing Permits issued (School Land)	2138	542,009.36
Cultivation Permits issued (School Land)	51	2,209.00
Hay Permits issued (School Land)	276	3,534 tons
Hay Seizures (School Land)	1	20 tons
Assignments Registered (Leases, Permits and Sales)	220	

Statement of the revenue pertaining to School Lands may be found in the report of the Accounting Division.



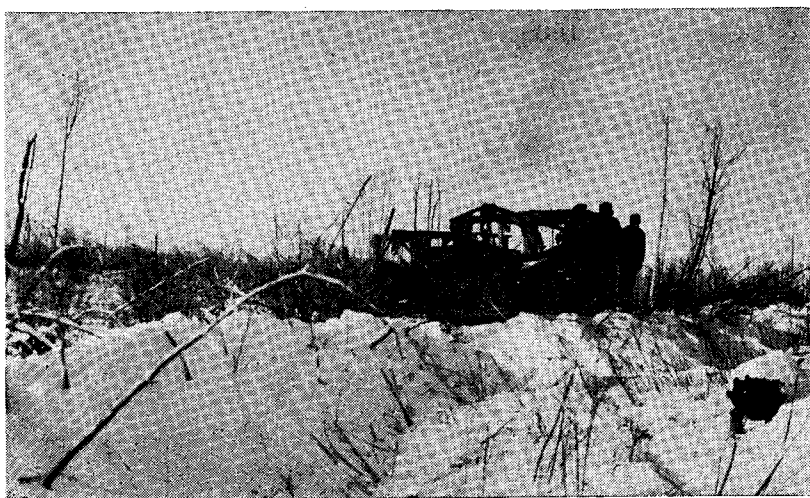
Building a road into Area across Burnt River



Typical cover of this Area



Typical Cover of this Area



Clearing machinery in operation



Clearing machinery in operation



Clearing machinery in operation



Clearing completed. Note strip of undisturbed cover adjacent to road allowance. Even very light covered strips, such as this, have some growth which in time will result in good windbreaks

Forestry

REPORT OF THE DIRECTOR OF FORESTRY, T. F. BLEFGEN

The year under review shows a continuation of the arduous duties thrust on the Forestry Division during the war years and immediately after the cessation of hostilities.

The demand for building material and other forest products has continued without prospect of a material decrease in sight.

The requirements for lumber to meet the housing shortage continue brisk. A number of larger building projects were cancelled by reason of the shortage of lumber and other building material.

The contemplated construction of very extensive public buildings throughout the Province and the Dominion were cancelled in an endeavour to provide required material for housing for veterans who had returned from war services. These projects, in most cases have been indefinitely postponed.

These postponements, although assisting somewhat in alleviating the shortage for the home building programme, did not overcome the difficulty entirely, and many thousands of new homes and apartments are planned for construction during the coming season.

Owing to the shortage of lath during the past years, a condition brought about by the inadequate labour supply to manufacture this by-product of lumber, a number of substitutes were used. However, in most cases, these have not been quite as suitable and a return to the use of lath is foreseen. Mills that are equipped to manufacture lath made every endeavour to produce the product from suitable material, but the shortage of labour proved a great handicap.

The demand for lumber for export to the United States continued strong as the building requirements are reported to be extremely heavy. However, the cost of material, high wages and, in some cases, the insufficient labour supply are having a tendency to lessen the demand, as the cost of an average home has become almost prohibitive and the building trades are high pricing themselves out of employment.

The parity of the Canadian dollar with that of the United States has had considerable effect on the lumber business in this Province, as the trade is no longer able to benefit by the 10% premium they received on sales to the United States.

The subsequent loss on exchange was somewhat alleviated by the removal of the ceiling price by the government of our southern neighbour, and the prices obtained on export sales were quite often as high as \$20.00 per thousand over the Wartime Prices Control Board's ceiling price on domestic shipments.

The policy of allowing only a limited export, instituted by the Prices Control Board which is based on the percentage of sales in the provinces, is proving reasonably effective in meeting, at least in part, the heavy demand for lumber in this and neighbouring provinces to the east.

During the winter just past some sales of lumber have been made from this Province for shipment to South Africa and Arabia. These are the first to these countries, and from reports received the material is proving satisfactory; therefore, further demand is indicated. However, the trade is not anticipating an indefinite continuance, as this condition has been brought about by the producers in British Columbia exporting their permissible quota to Great Britain and to China. When these contracts are completed, no doubt, the lumber producers in

the western province will acquire this market by reason of their shorter rail haul to tidewater.

Under the circumstances, it is anticipated that in the not distant future both prices and sales volume of lower grade lumber will decline as the result of buyer resistance and improved supplies.

The demand for railway ties continues to be heavy. In addition to the heavy purchases made in the past by the Canadian National Railways and the Northern Alberta Railways, the Canadian Pacific Railways have called for tenders for delivery on some of their lines in this Province. This is a new development, as their requirements for a number of years have been met from their extensive timber holdings in British Columbia, and in the past they have shipped ties to Rocky Mountain House from points in British Columbia, while the Canadian National Railways were obtaining a large portion of their tie requirements in that locality and shipping them to different lines of their system.

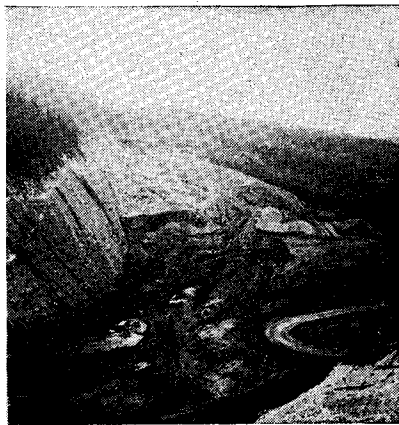
The demand for pit props and mine timbers was not as heavy as during the past several years; although the coal requirements continue brisk, the cost of labour, refusal of some to do an honest day's work, and absenteeism to avoid the payment of income tax have forced some mine operators to adopt new systems of extracting coal from the ground.

Some companies are now "strip mining", removing the overburden from the coal with bulldozers and heavy power equipment. The exposed coal seams are then available for loading by power shovels and drag lines into trucks, and the coal is hauled to the railway for shipment.

As a result of this method of coal production extensive areas of the surface are disturbed and the forest growth thereon destroyed. If these waste dumps are not seeded naturally or by artificial means, barren areas that are non-productive and scars of man's ruthlessness will be in evidence for years to come.

The supply of labour in the woods showed some sign of improvement during the past winter. However, there remains a shortage of good woods workers, and it is reported that two and sometimes three men are required to produce the same quantity of material produced by one good man before the war.

There is also a great tendency to quit the job for very little, if any, provocation, spend the "stake" which is often quite large as wages paid are high, squandering this in a tavern or beer parlour, then secure a job at some other camp or mill where the routine is repeated.



One of the results of strip mining



Strip mining in the Brazeau-Athabaska Forest

The introduction of modern equipment in the building of roads and the hauling of lumber has increased the accessible supply of timber and areas that a few years ago were thought to be inaccessible for years to come are now being harvested.

The salvage of fire-killed spruce for pulpwood purposes has been carried on quite extensively throughout the northern part of the Province, and in that portion north of township 64 a reduction of 25c per cord in the rate of dues charged was granted by Order in Council.

The market now available for pulpwood permits the salvage of material that would otherwise be waste, and the reduction granted encourages operators to confine their activities principally to the northern area where a market for mine props does not exist.

It was impossible to obtain this market until the price of newsprint reached the high obtainable during the last few years, as the freight rates would not permit a profit.

The proposed increase of 30% on freight rates made by different railways, if granted, would mean the loss of this business. However, there is a possibility that one or more pulp or paper companies might establish a mill or mills in the Province which would eliminate the long freight haul. Such establishment would greatly assist in the economic betterment of the residents of this Province, especially of those on homesteads and farms on which there is some timber.

An assured market should also encourage the setting aside of marginal or sub-marginal land as wood lots from which a crop could be harvested each winter.

It is again strongly recommended that a forest inventory be made to ascertain the quantity, quality and annual increment of the forests of the Province.

It is admitted that during the war years and immediately thereafter personnel were not obtainable for this work. However, capable men should be available in the near future, and a start should be made so that plans may be worked out with the objective of harvesting our forest crop on the basis of a sustained yield.

We are pleased to report that the splendid co-operation received from the Dominion Government Department of Agriculture, Entomological Branch, during the past years in conducting forest insect surveys in this Province has continued during the year under review. Two forest insect rangers covered a great deal of the forest area and gave wonderful co-operation, both in collecting and submitting samples of different tree insects and instructing selected rangers in the Alberta Forest Service in this very important work.

We are pleased to report that with the exception of a small area in the Slave Lake Division where the Bronze Birch Borer is quite active, no serious infestation of forest insects has developed.

We again wish to take this opportunity of thanking the management of the different radio stations and the Royal Canadian Mounted Police for the very splendid co-operation they have given in forest protection, and to assure them that their assistance is more than welcome and greatly appreciated by the personnel of the Alberta Forest Service.

The negotiations that have been carried on for some time between the Provincial and the Dominion Governments in an endeavour to obtain assistance by sharing the expenses necessary to adequately protect the forests on the eastern slope of the Rocky Mountains seems to be drawing to a successful conclusion, and we are pleased to report that, in the not distant future, it is expected that an agreement will be reached.

Such an agreement should be of great assistance in alleviating the burden of forest protection borne by the Province since the transfer of the natural resources,

and should also be a means of affording a greater distribution of the small appropriations with which we are forced to function in developing and opening the northern districts by trails, roads, etc., making them more readily accessible for the detection and suppression of fires.

FOREST PROTECTION

The winter of 1945-46 was longer than usual, severe weather starting in the latter part of November and continuing to the third week in March.

In most of the districts on the eastern slope forests snowfall was heavy and at times extremely low temperatures were recorded.

The late spring, however, was of material assistance in holding the fire hazard to a minimum until the green vegetation got a good start, which assisted greatly in retarding the rapid spread of fire.

Summer weather was fair and warm; frequent showers and several heavy rains occurred during June and the first part of July. During the latter part of July, however, the weather was warm with hot south-west winds which brought the hazard well above the danger point. This hazard was also accentuated by reason of the great number of tourists, campers and those on holiday and fishing trips.

During the latter part of August rains occurred that were quite general over the forest areas of the Province. These rains were of material assistance in holding the hazard near normal during a period when it is generally high.

In the Northern Alberta Forest District, ground conditions were very dry during the fall of 1945 and the forest floor on most districts was tinder dry, with the result that there was no penetration of frost in the ground.

This was the second successive year that this condition has occurred and, although ground fires burn more freely under the snow when no frost has penetrated, practically all moisture from melting snow is absorbed.

The moisture resulting from winter snow, however, after successive years of drouth was not sufficient to fill normal depressions and muskeg areas.

The winter's snow, except in the thickly wooded areas, had practically all disappeared by the 10th of April, and the remainder of the month and the first three weeks in May continued dry with moderate to high winds occurring daily. This condition caused a rapid rise in the fire hazard which culminated on May 17th, and relief was obtained on May 28th by rains that were quite general.

During the summer a shortage of rainfall was experienced. However, rains occurred at intervals sufficiently close together to keep the hazard down to normal in some districts and below in others. The first snow of the fall season occurred during the last week of October and was followed by cold weather with heavy frosts at nights until the middle of November, when a snowfall occurred that was quite general and sufficiently heavy to end the fire hazard for the year.

We have great pleasure in reporting that the recommendation of a policy of zoning certain areas of the Province in which no settlement should be permitted has been accepted, and considerable work has been done in preparing the plans in co-operation with the Director of Lands and different heads of the University of Alberta who have conducted soil surveys.

FIRE DETECTION AND FOREST PROTECTION

Ranger patrols and lookouts continue as in previous years to be our chief means of detecting fires in their incipient stages.

In the Rocky Mountain Forest Reserves additional lookouts are required to render complete coverage, and it is thought that this will be one of the first projects that will be inaugurated by the Dominion-Provincial Board to be set up in connection with the conservation and perpetuation of the watershed.

In the Northern Alberta Forest districts the coverage of the Province was very meagre. We are, however, gradually adding to the system as funds are made available.

During the summer of 1946 the Heart Lake Tower was completed and ready for operation prior to the commencement of the 1947 spring danger period.

FIRE SUPPRESSION

During the fire season of 1946 a total of 275 fires were dealt with as shown below in classes:

- 66 Class "A" or small fires (less than $\frac{1}{4}$ of an acre).
- 62 Class "B" fires (over $\frac{1}{4}$ acre up to 10 acres).
- 88 Class "C" fires (over 10 acres up to 500 acres).
- 59 Class "D" fires (over 500 acres).

COMPARISON OF FIRE LOSSES BY PERCENTAGE

	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946
Campers	35.9	27.4	28.8	26.0	20.9	31.5	26.8	24.0	18.7	14.9
Smokers	4.5	3.6	5.0	4.8	2.2	3.3	7.5	6.5	8.8	5.5
Settlers	20.7	14.6	14.8	12.2	22.7	13.9	12.4	14.5	15.1	10.5
Railways	9.3	4.2	4.6	6.7	7.6	11.1	23.0	16.0	12.0	21.1
Lightning	2.2	2.3	4.0	2.8	1.6	.9	.4	3.4	6.0	4.4
Industrial Operations .....	.8	1.4	1.4	.6	1.4	3.6	1.9	3.6	3.5	9.5
Incendiary	13.5	14.6	9.8	8.9	10.8	6.9	5.7	6.8	6.0	2.9
Public Works .....	.3	.8	.6	.....	.2	.5	.4	.....	.4	.....
Unclassified	7.2	9.0	13.4	16.9	8.8	10.2	7.5	6.5	13.4	6.9
Unknown	5.6	22.1	17.6	21.1	23.8	18.1	14.4	18.7	16.1	24.3

RAILWAY FIRE LOSSES, CALENDAR YEAR 1946

This statement deals only with fire burning on forested territory under the supervision of the Alberta Forest Service, and which started within 300 feet of the centre line of the railway right-of-way.

Causes and number of fires:

Railway causes—Locomotives	24
Employees	2
Sub-total	26
Other causes—Campers and travellers .....	.....
Settlers	2
Unknown	12
Unclassified	2
Sub-total	16
TOTAL	42

Number of acres burned:

Slashing or old burn	560
Timber land	683
Young growth	578½
Not forested .....	.....
TOTAL	1,821½

Loss:

Timber	\$6,255.75
Young growth	1,730.75
Forest products .....	.....
Other property .....	.....
TOTAL	\$7,986.50

ANNUAL STATEMENT OF FIRES BY CAUSES, MONTHLY DISTRIBUTION, ETC., WITHIN AND OUTSIDE FOREST RESERVES, ALBERTA—CALENDAR YEAR, 1946

Cause	Number					P.C.	Damage	Area, Acres	Monthly Distribution												Fires Inside Provincial Forests		Fires Outside Provincial Forests			
	Tot.								January	February	March	April	May	June	July	August	September	October	November	December	Prosecutions	Convictions	No.	Area, Acres	No.	Area, Acres
	A	B	C	D																						
Camp-fires	10	6	17	8	41	14.9%	25,875.14	37,304½					5	10	3	5	9	4	3	2			7	34	37,304½	
Smokers	8	1	4	2	15	5.5	6,501.38	4,533					5	5	3	1	5	4					7	3	4,530	
Settlers	4	2	13	10	29	10.5	65,087.25	90,671½					17	2	2	3	11		1				3	29	90,671½	
Railways	17	24	14	3	58	21.1	15,727.75	3,551¾					10	24	3	2	6		2				7	51	3,549¾	
Lightning	6	2	4		12	4.4	5,070.38	819¾						1	1	2		2					7	201	5,618¾	
Industrial																										
Operations	8	8	5	5	26	9.5	26,803.12	12,994		1			8	11	1	2	1			2			10	16	11,681½	
Incendary	1	1	4	2	8	2.9	6,110.63	7,466					2	5		1							1	20	7,446	
Public Works																										
Unclassified	4	4	10	1	19	6.9	1,482.47	5,006					5	3		4	3	4					1	18	5,004½	
Unknown	8	14	17	28	67	24.3	87,129.58	109,937½	1			5	41	3	3	5	5	2	2					67	109,937½	
TOTALS	66	62	88	59	275	100.0%	239,787.70	272,283½	1	1		40	117	13	23	41	25	8	6				40	235	270,743½	
Per cent.	24.0	22.5	32.0	21.5	100.0				.4	.4		14.5	42.5	4.7	8.4	14.9	9.1	2.9	2.2				14.5		85.5	

ANNUAL SUMMARY OF FOREST FIRE LOSSES, ALBERTA—CALENDAR YEAR, 1946

FIRE CAUSES	NUMBER OF FIRES					LANDS AFFECTED								LOSS								SUPPRESSION COSTS							
						Ownership		AREA Total, Acres	CONDITION				TIMBER (MERCHANTABLE AND CUT-OVER)					Loss of Timber	Loss of Young Growth	Loss of Other Property	Total Loss	Ranger Service	Other Expenditures	Total					
	Public, Acres	Private, Acres	Merchantable Timber, Acres	Cut-over Timber, Acres	Young Growth, Acres	Not Forested, Acres	SALVABLE			UNSALVABLE																			
							Saw-timber, M.ft.B.M.	Other, Cords	Depreciation	Saw-timber, M.ft.B.M.	Other, Cords	Logs																	
FIRES WITHIN FOREST RESERVES																													
Campers	7				7																								
Smokers	6	1			7	3				1½											\$ 3.75	\$ 100.00	\$ 100.00	\$ 3.75	\$ 13.01			\$ 13.01	
Settlers							3																				\$ 6.00	\$ 43.81	
Railways	4	3			7	1½	½	2		½		1½																	
Lightning	5	1	1		7	201		201	185		11																		
Industrial Operations	5	4		1	10	1,312½		1,312½	700	611			240	1,450							1.88	8,000.00	8,000.00		45.11			45.11	
Incendiary						20		20			15																		
Public Works																													
Unclassified		1			1																								
Unknown																													
TOTALS	27	10	2	1	40	1,538	2	1,540	885	611	29½	14½	240	1,450			7,030	\$ 5,272.50	\$ 6,855.00	\$ 43.13	\$ 8,850.00	\$ 15,748.13	\$ 591.29	\$ 660.71	\$ 1,252.00				
FIRES OUTSIDE FOREST RESERVES																													
Campers	3	6	17	8	34	37,244½	60	37,304½	3,199	483	6,989	26,633½	40	20	\$ 82.50	2,479	11,882	\$ 9,187.50	\$ 6,108.88	\$ 19,626.26	\$ 40.00	\$ 25,775.14	\$ 1,162.56	\$ 9,278.94	\$ 10,441.50				
Smokers	2			2	8	3,690	840	4,530	2,018	290	356	1,866	500	6,000	2,000.00	362	5,172	4,560.00	4,274.00	2,223.63		6,497.63	205.32	2,157.62	2,362.94				
Settlers	4	2	13	10	29	76,384	14,287	90,671	13,643	2,020	14,474	60,534		540	395.00	5,338	66,003	40,317.25	40,222.25	24,865.00		65,087.25	509.17	6,620.62	7,129.79				
Railways	13	21	14	3	51	2,064¼	1,485½	3,549¾	683	595	539½	1,732¼		100	50.00	75	8,341	6,405.75	6,455.75	1,263.00		7,727.75	143.42	582.13	725.55				
Lightning	1	1	3		5	618¾		618¾	311		142	165¾				72	3,636	2,811.00	2,791.00	710.00		3,501.00	106.17	1,416.95	1,523.12				
Industrial Operations	3	4	5	4	16	6,596½	5,085	11,681½	6,695½	2,391	2,035	560	30		15.00	399½	22,109	15,978.50	14,379.63	2,749.99	3,636.00	20,765.62	325.51	2,730.77	3,056.28				
Incendiary	1	1	3	2	7	7,446		7,446	470		5,121	1,855				460	1,200	1,365.00	1,365.00	4,708.13		6,073.13	135.64	1,693.15	1,828.79				
Public Works																													
Unclassified	4	3	10	1	18	4,713½	291	5,004½	230		305	4,469½				222	1,186	1,188.25	869.34	613.13		1,482.47	348.70	4,188.46	4,537.16				
Unknown	8	14	17	28	67	108,975½	962	109,937½	6,085½	1,555	20,396½	81,900½	925	12,430	1,792.20	1,309	61,425	34,206.75	34,102.70	52,826.88	200.00	87,129.58	1,385.11	17,715.65	19,100.76				
TOTALS	39	52	86	58	235	247,733	23,010½	270,743½	33,335	7,334	50,358	179,716½	1,495	19,090	4,334.70	10,716½	180,954	\$116,020.00	\$110,568.55	\$109,586.02	\$ 3,885.00	\$224,039.57	\$ 4,321.60	\$ 48,555.29	\$ 52,876.89				
FIRES WITHIN AND WITHOUT FOREST RESERVES																													
Campers	10	6	17	8	41	37,244½	60	37,304½	3,199	483	6,989	26,633½	40	20	\$ 82.50	2,479	11,882	\$ 9,187.50	\$ 6,108.88	\$ 19,626.26	\$ 140.00	\$ 25,875.14	\$ 1,175.57	\$ 9,278.94	\$ 10,454.51				
Smokers	8	1	4	2	15	3,693	840	4,533	2,018	290	357½	1,867½	500	6,000	2,000.00	362	5,172	4,560.00	4,274.00	2,223.38		6,501.38	243.13	2,163.62	2,406.75				
Settlers	4	2	13	10	29	76,384	14,287	90,671	13,643	2,020	14,474	60,534		540	395.00	5,338	66,003	40,317.25	40,222.25	24,865.00		65,087.25	509.17	6,620.62	7,129.79				
Railways	17	24	14	3	58	2,065¾	1,486	3,551¾	683	595	540	1,733¾		100	50.00	75	8,341	6,405.75	6,455.75	1,263.00		15,727.75	188.53	582.13	770.66				
Lightning	6	2	4		12	819¾		819¾	496		153	170¾	240	1,450		72	3,636	2,811.00	4,358.50	711.88		5,070.38	342.42	1,922.48	2,264.90				
Industrial Operations	8	8	5	5	26	7,909	5,085	12,994	7,395½	3,002	2,035	561½	30		15.00	399½	29,139	21,251.00	19,667.13	2,749.99	4,386.00	26,803.12	546.60	2,784.15	3,330.75				
Incendiary	1	1	4	2	8	7,466		7,466	470		5,136	1,860				460	1,200	1,365.00	1,365.00	4,745.63		6,110.63	168.15	1,788.95	1,957.10				
Public Works																													
Unclassified	4	4	10	1	19	4,713½	292½	5,006	230		306½	4,469½				222	1,186	1,188.25	869.34	613.13		1,482.47	354.21	4,188.46	4,542.67				
Unknown	8	14	17	28	67	108,975½	962	109,937½	6,085½	1,555	20,396½	81,900½	925	12,430	1,792.20	1,309	61,425	34,206.75	34,102.70	52,826.88	200.00	87,129.58	1,385.11	17,715.65	19,100.76				
TOTALS	66	62	88	59	275	249,271	23,012½	272,283½	34,220	7,945	50,387½	179,731	1,735	20,540	4,334.70	10,716½	187,984	\$121,292.50	\$117,423.55	\$109,629.15	\$ 12,735.00	\$239,787.70	\$ 4,912.89	\$ 49,216.00	\$ 54,128.89				
SUMMARY BY DIVISIONS																													
N.A.F.D.	28	46	82	56	212	243,621½	22,072	265,693½	30,885	6,519	48,669¼	179,620¼	990	12,430	1,877.20	10,201½	174,018	\$109,891.50	\$105,484.42	\$106,542.89	\$ 3,085.00	\$215,112.31	\$ 3,998.63	\$ 45,025.63	\$ 49,024.26				
Outside Reserves	11	6	4	2	23	4,111½	938½	5,050	2,450	815	1,688¾	96¼	505	6,660	2,457.50	515	6,936	6,128.50	5,084.13	3,043.13	800.00	8,927.26	322.97	1,358.66	1,681.63				
Clearwater	2	4			6	3		3																					
Crowsnest-Bow River	8	2			10	9		9																					
Brazeau-Athabasca	17	4	2	1	24	1,526		1,526	885	600	26½	14½	240	1,450			7,000	5,250.00	6,817.50	41.25	8,000.00	14,858.75	481.49	632.81	1,114.30				
Cypress Hills																													
TOTALS	66	62	88	59	275	249,271	23,012½	272,283½	34,220	7,945	50,387½	179,731	1,735	20,540	4,334.70	10,716½	187,984	\$121,292.50	\$117,423.55	\$109,629.15	\$ 12,735.00	\$239,787.70	\$ 4,912.89	\$ 49,216.00	\$ 54,128.89				

M.ft.B.M.—Thousand feet board measure.

*N.A.F.D.—Northern Alberta Forest District

SUMMARY SHOWING TOTAL NUMBER OF FIRES AND BURNT OVER AREA
FROM 1931 TO 1946, INCLUSIVE

Year	Total No. of Fires	Total Acreage	Not Forested	Net Acreage
1931	622	604,876.12	209,064.75	395,811.37
1932	379	136,117.89	68,253.42	67,864.47
1933	288	93,765.00	30,955.88	62,809.12
1934	240	58,870.00	21,656.50	37,213.50
1935	97	6,319.75	3,267.75	3,052.00
1936	248	204,454.00	46,534.00	157,920.00
1937	375	835,259.00	155,069.50	680,189.50
1938	521	1,758,345.50	842,384.00	915,961.50
1939	499	429,139.25	159,774.50	269,364.75
1940	313	474,244.25	108,597.50	365,646.75
1941	445	1,355,424.50	459,475.00	895,949.50
1942	215	325,815.75	182,208.25	143,607.50
1943	265	515,149.25	409,503.50	105,645.75
1944	325	722,658.00	273,186.25	449,471.75
1945	284	216,736.50	128,263.50	88,473.00
1946	275	272,283.50	179,731.00	92,552.50
	5,391	8,009,460.26	3,277,925.30	4,731,532.96

FOREST ADMINISTRATION

The demand for products of the forests continued to be very heavy, and numerous applications were received and dealt with. When timber applied for was found to be mature or over-mature, applications were accepted and the timber offered for sale in the usual manner. More applications for immature timber were received during the past year by reason of the high prices being paid for the finished product and some persons being anxious to cut any accessible timber with no thought to the future. However, when the report showed that the stand was not ready for cutting the application was refused and the expenses involved charged to the applicant.

This procedure has had the desired effect in largely confining applications to areas that are ready for harvest, and eliminates the endeavour of a few to meet their selfish interest in spite of the enormous waste that would occur if the right to cut were granted.

The demand for mine timbers shows a falling off. This condition is attributable to the tendency to open-pit mining as previously referred to in this report.

TIMBER CUT UNDER PERMIT, ALBERTA FOREST RESERVES—FISCAL YEAR 1946-47

	Crownest- Bow River	Clearwater	Brzeau- Athabaska	Cypress Hills	Totals
Number of permits	184	37	27	222	470
Building Logs (lineal feet)	19,452	8,222	9,804		37,478
Fence posts	4,975	7,070	185	11,825	24,055
Fence rails	7,131	194	495		7,820
Fence droppers	1,400				1,400
Fuelwood, dry (cords)	1,004	854	142	292	2,292
Fuelwood, green (cords)	4	400	5	2	411
Lath	50,000				50,000
Lagging (lineal feet)	34,000	37,000	450,000		521,000
Lumber (feet board measure)	61,000		90,074	6,400	157,474
Mine timber, dry (lineal feet)	958,564	217,300			1,175,864
Mine timber, green (lineal feet)	1,400	54,040	28,532		83,972
Poles, telephone, telegraph (lineal feet)	1,142		25,000		26,142
Railway ties (pieces)			6,000		6,000
Roof poles (pieces)	990	887			1,877
Round timber (pieces)				23,427	23,427
Round timber (lineal feet)				1,348½	1,348½
Saw logs (pieces)				1,059	1,059

DEPARTMENT OF LANDS AND MINES

TIMBER OPERATIONS ON FOREST RESERVES TIMBER SALE FOR THE PERIOD
APRIL 1st, 1946, TO MARCH 31st, 1947

Timber Sales	Crownest- Bow River	Clearwater	Brazeau- Athabaska	Totals
Number of operations	35	26	52	113
Building logs (lineal feet) .....	.....	.....	1,216	1,216
Cordwood (cords)	604¾	.....	.....	604¾
Lagging (lineal feet)	467,895	138,461	78,004	684,360
Lumber, feet board measure	11,604,448	8,766,104	15,571,744	35,942,296
Mine timber, green (lineal feet) .....	.....	625,133	744,301	1,369,434
Mine timber, dry (lineal feet)	2,110,322	842,240	.....	2,952,571
Piling (lineal feet)	6,346	1,296	.....	7,642
Poles, telegraph, telephone (lineal feet) .....	.....	149	.....	149
Railway ties (pieces) .....	.....	46,674	252,284	298,958
Slabs (cords)	15	.....	965	980
Railway ties (lineal feet) .....	.....	.....	15,336	15,336

Provincial and School Lands:

Provision was made for the sale of timber on School Lands occurring in the same logging unit as that on Provincial Lands, the revenue derived being prorated according to the acreage. This procedure obviates the necessity of handling two different berths on adjoining lands in the same logging unit and materially assists in the handling of records both by the operators and the Department. This procedure has been the subject of very favourable comment.

Although the greater number of personnel of the armed forces have returned to civilian pursuits, there remains a great shortage of woods workers in spite of the fact that very good wages are being paid.

The Alberta Forest Products Association are advocating that a request be made to the Federal Government to allow their Association to bring in 1,500 displaced men from Europe to meet the anticipated shortage of woodsmen required to meet present and next winter's demands of member operators.

STATEMENT OF TIMBER OPERATIONS FOR THE PERIOD APRIL/46 TO MARCH 31/47,
ON PROVINCIAL LANDS IN THE EDMONTON DISTRICT AND IN THE
CALGARY AND PEACE RIVER LAND AGENCIES

	Head Office, Edmonton District	Calgary District	Totals
(a) OPERATIONS ON LICENSE TIMBER			
BERTHS:			
Number of active operations	130	20	150
Lumber, feet, board measure	138,375,969	14,796,308	153,172,277
Railway ties	486,077	31,260	517,337
Switch ties	122	.....	122
Slabs, cords	2,421	34,314	36,735
Building logs, lineal feet	14,476	.....	14,476
Lath	1,710,333	132,550	1,842,883
Mine timber, lineal feet .....	.....	176,679	176,679
Fuelwood, cords .....	.....	101	101
(b) OPERATIONS ON TIMBER PERMIT			
BERTHS:			
Number of active operations	372	60	432
Lumber, feet, board measure	82,837,766	7,531,140	90,368,906
Railway ties	311,251	101,661	412,912
Switch ties	600	.....	600
Lath	116,300	102,450	218,750
Mine timber, lineal feet	3,700	673,870	677,570
Fuelwood, cords .....	.....	15	15
Building logs, lineal feet	22,190	90,438	112,628
Fence posts .....	.....	13,278	13,278
Piling .....	.....	3,604	3,604
Lagging .....	.....	379,765	379,765
Pulpwood, cords	6,940	.....	6,940
Mine ties .....	.....	24,484	24,484
Slabs, cords .....	.....	2½	2½
Poles .....	.....	42,077	42,077

(c) OPERATIONS UNDER SPECIAL TIMBER PERMITS:			
	Head Office, Edmonton District	Calgary District	Totals
Number of active operations	1,005	120	1,125
Lumber, feet, board measure	40,678,783	3,215,302	43,894,085
Railway ties	291,031	125,872	416,909
Poles	251,716	1,412	253,128
Fuelwood, cords	424	.....	424
Shingles	257,000	.....	257,000
Fence posts	9,896	.....	9,896
Fence rails	1,590	.....	1,590
Mine timber, lineal feet	417,506	36,310	453,816
Pulpwood, cords	24	.....	24
Building logs, lineal feet	8,369	.....	8,369
Piling, lineal feet	14,430	.....	14,430
Lagging, lineal feet	16,261	.....	16,261
Boxwood, cords	12	.....	12
Plywood, cords	45	.....	45
Slabs, cords .....	.....	77	77

SETTLERS TIMBER PERMITS ISSUED DURING FISCAL YEAR APRIL 1/46 TO
MARCH 31/47—PROVINCIAL LANDS

	Edmonton	Calgary	Peace River	Total
Number of Permits issued	1,292	148	1,146	2,586
Building logs (lineal feet)	90,815	8,760	28,947	128,522
Piling (lineal feet)	720	7,000	10,950	18,670
Mining timber (5"-9")	462,766	879,200	.....	1,341,966
Mine lagging (under 5") .....	.....	209,000	.....	209,000
Telephone poles (lineal feet)	50,253	.....	300	50,553
Lumber (feet, B.M.)	6,168,705	208,500	7,960,421	14,337,626
Fence posts	102,080	40,600	92,292	234,972
Fence droppers .....	.....	500	.....	500
Roof poles	11,332	440	64,632	76,404
Fence rails (lineal feet)	60,393	18,900	324,340	403,633
Fuelwood (cords)	5,324	1,301	6,132	12,757
Shingle bolts (cords)	119	.....	73	192
Shingles	200,000	.....	31,000	231,000
Railway ties	1,000	.....	.....	1,000
Pulpwood (cords)	2,237	.....	7,652	9,889
Lath bolts (cords)	20	.....	.....	20
Lath .....	.....	.....	.....	.....
Boxwood (cords)	150	.....	.....	150
Guard rails (lineal feet)	5,000	.....	.....	5,000

STATEMENT OF TIMBER OPERATIONS FOR THE PERIOD APRIL/46 TO MARCH 31/47,
ON SCHOOL LANDS IN THE EDMONTON DISTRICT AND IN THE
CALGARY AND PEACE RIVER LAND AGENCIES

	Edmonton District	Calgary District	Total
(a) OPERATIONS ON LICENSE TIMBER BERTHS:			
Number of active operations .....	.....	8	8
Lumber, feet board measure .....	.....	143,463	143,463
Railway ties .....	.....	8,868	8,868
(b) OPERATIONS ON TIMBER PERMIT BERTHS:			
Number of active operations	13	.....	13
Lumber, feet board measure	2,296,783	.....	2,296,783
Railway ties	5,139	.....	5,139
Building logs, lineal feet	5,736	.....	5,736
(c) OPERATIONS UNDER SPECIAL TIMBER PERMITS:			
Number of active operations	13	.....	13
Lumber, feet board measure	391,002	.....	391,002
Railway ties	4,350	.....	4,350
Plywood, cords	132½	.....	132½

SETTLERS' TIMBER PERMITS ISSUED DURING FISCAL YEAR APRIL 1/46 TO
MARCH 31/47—SCHOOL LANDS

	Edmonton	Calgary	Peace River	Total
Number of Permits issued	275	60	50	385
Building logs (lineal feet)	962	.....	.....	962
Piling (lineal feet) .....	.....	.....	360	360
Mining timber (5"-9")	20,400	65,000	.....	85,400
Mine lagging (under 5") .....	.....	15,000	.....	15,000
Telephone poles (lineal feet) .....	.....	.....	.....	.....
Lumber (ft., B.M.)	794,333	55,000	303,500	1,152,833
Fence posts	8,670	13,125	700	22,495
Fence droppers .....	.....	.....	.....	.....
Roof poles	100	.....	.....	100
Fence rails (lineal feet)	700	425	.....	1,125
Fuelwood (cords)	1,346	149	708	2,203
Shingle bolts (cords)	30	.....	9	39
Shingles .....	.....	.....	.....	.....
Railway ties .....	.....	.....	.....	.....
Pulpwood (cords)	50	.....	200	250
Lath bolts (cords) .....	.....	.....	.....	.....
Lath	3,000	.....	.....	3,000
Boxwood (cords) .....	.....	.....	.....	.....
Guard rails (lineal feet) .....	.....	.....	.....	.....

DEPARTMENT OF LANDS AND MINES

SUMMARY OF TIMBER OPERATIONS ON PROVINCIAL AND SCHOOL LANDS FOR THE PERIOD APRIL 1, 1946, TO MARCH 31, 1947

	PROVINCIAL LANDS					SCHOOL LANDS					FOREST RESERVES				
	License Timber Berths	Permit Timber Berths	Special Timber Permits	Other Permits		License Timber Berths	Permit Timber Berths	Special Timber Permits	Other Permits		Timber Sales	Timber Permits	Totals		
Number of active operations	150	432	1,125	2,586		8	13	13	385		113	470	5,295		
Lumber, feet, board measure	153,172,277	90,860,506	43,894,085	14,337,626		143,463	2,296,783	391,002	1,152,835		35,942,296	157,474	352,348,545		
Railway ties	517,337	412,912	416,909	1,000		8,868	5,139	4,350			298,958	6,000	1,671,473		
Piling, lineal feet		3,604	14,430	18,670					360		7,642		44,706		
Mine timber, lineal feet	176,679	677,570	433,816	1,341,966					85,400		2,952,571	1,175,864	6,863,866		
Telegraph and telephone poles, lineal feet		42,077	233,128	50,353			5,736		962		149	26,142	372,049		
Building logs and culvert timber, lineal feet	14,476	112,628	8,369	128,522					1,125		1,216	37,478	309,387		
Fence rails		1,590	403,633						22,495			7,820	414,168		
Fence posts		13,278	9,896	234,972								24,055	304,696		
Fence droppers				500								1,400	1,900		
Roof poles				76,404					100			1,877	78,381		
Fuelwood, cords	101	15	424	12,757					2,203		604 $\frac{3}{4}$	2,292	18,396 $\frac{3}{4}$		
Slabs, cords	36,735	24,484	77								980		37,794 $\frac{1}{2}$		
Mine ties, lineal feet													24,484		
Shingles			237,000	231,000									488,000		
Shingles bolts, cords			192										231		
Lath	1,842,883	218,750							39			50,000	2,111,633		
Round timber, pieces												23,427	23,427		
Switch ties	122	600											722		
Pulpwood, cords		6,940	24	9,889								1,348 $\frac{1}{2}$	16,853		
Round timber, lineal feet												1,059	1,059		
Sawlogs, pieces												50,000	1,354,386		
Lagging		379,765	16,261	209,000					15,000		684,360		3,162		
Boxwood, cords			12	150				132 $\frac{1}{2}$	3,000				177 $\frac{1}{2}$		
Plywood, cords			45						250				270		
Lath bolts, cords				20									5,000		
Guard rails, lineal feet				5,000								83,972	1,453,406		
Mine timber, green, lineal feet											1,369,434		15,336		
Tramway ties, lineal feet											411		411		
Fuelwood, green, cords													276		
Custom sawmill permits issued													130		
Timber seizures made				125					5						

GRAZING

Following a rather unfavourable winter and early spring, stock entering the different grazing divisions were in fair shape but below normal. However, good forage conditions that were well maintained throughout the grazing season resulted in stock leaving in very good condition.

Some divisions were not fully stocked, the reason given being the presence of predatory animals, of which bears are reported to be the principal killers of stock. However, an effort is being made to overcome this objection by granting different hunters permits to kill bears and providing the rangers with ammunition for the same purpose. This procedure has resulted in the extermination of some of the most notorious killers.

In the Cypress Hills Forest the summer moisture that occurred this season provided better forage conditions than for several previous years. As the result of better moisture conditions stock were able to water closer to the grazing areas, and in spite of the poor condition in which they entered in the spring practically all stock left in good condition, and a number of good beef steers were shipped off the grass direct to market without further conditioning, selling as high as 13c with an average of 11½c, live weight, per pound.

The market for cattle continued good with prices remaining exceptionally high, and good demand is also reported for "canner horses" at prices from 1½ to 2c per pound, live weight.

GRAZING STATEMENT—ALBERTA FOREST SERVICE, 1946-47

Forest	No. of Permits	No. of Horses	No. of Cattle	No. of Sheep
Cypress Hills	61	219	3,254	.....
Crownsnest-Bow River	300	1,019	21,644	4,508
Clearwater	83	1,073	1,074	.....
Brzeau-Athabaska	155	882	76	.....
TOTALS	599	3,193	25,848	4,508

COMPARATIVE STATEMENT, GRAZING—ALBERTA FOREST SERVICE

	From the year 1931-1946	Average per year
Number of permits	8,222	513.8
Number of cattle	357,781	22,361.3
Number of horses	50,281	3,142.8
Number of sheep	77,837	4,864.8

IMPROVEMENTS

The favourable fire season during the season under review permitted the carrying out of a great deal of needed improvement work, and during this period a great number of man days were spent improving trails, roads, telephone lines, buildings, cabins and pasture fences.

On the Athabasca Forest a good road was built by contractors working for several of the larger oil companies which are making a joint effort to bring in an oil field on what was reported to be a very favourable location in the Muskeg River area.

This road follows closely and along the road and trail to Entrance constructed by the Forestry Division in past years to the well site on the banks of the Muskeg River, a distance of 73 miles from the starting point at Entrance.

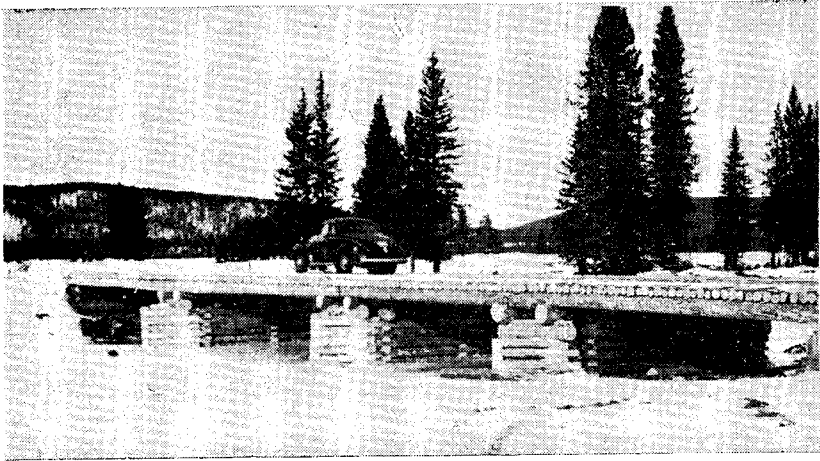
This road renders the area more quickly accessible in case of fire, the distance which formerly required from two and one-half to three days by pack and saddle horse can be traversed in as many hours. It is understood, however, that the cost exceeds the amount received for our appropriations for several years.

Some progress is being made on improvements in the Northern Alberta Forest Districts. However, the ranger districts are much larger than they are on the Forest Reserves; therefore, the doubling up of men to carry out improvement work during a favourable fire period cannot be carried out as well as too much

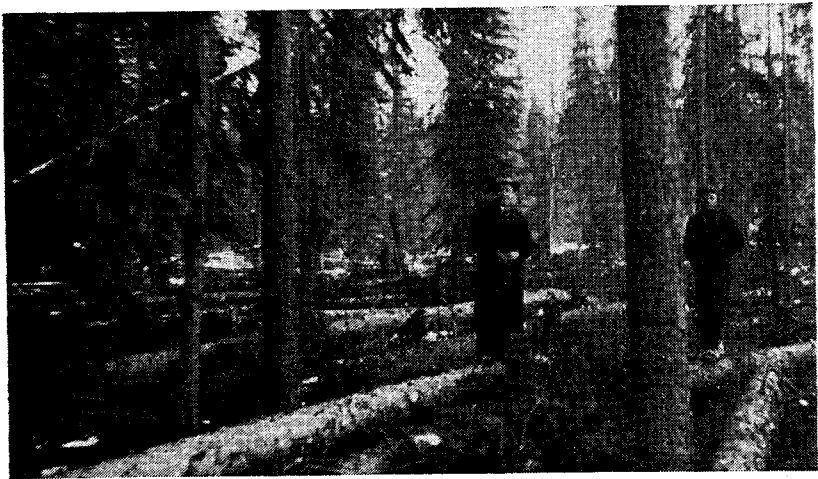
time is required in travel. Furthermore, weather conditions change rapidly, and rangers are forced by fire conditions to return to their own districts before a great deal of improvement work can be accomplished.

We were in spite of these adverse conditions able to complete the Heart Lake lookout tower by the use of Forestry personnel and this unit adds one more to our meagre detection system.

It is again strongly recommended that provision be made in our appropriations to secure small bulldozers and other suitable power equipment not only for the opening up of present inaccessible areas of timber, but for fire suppression as this type of equipment has proved to be very effective in fire fighting. Although the cost per hour, when equipment is hired, is quite high, a bulldozer in certain locations is capable of establishing far more fire line than a crew of men and, as a line or basis for attack is necessary, the use of this equipment releases men for direct attack and suppression.



Berland River Bridge, Oil Well Road, Brazeap-Athabaska Forest



Tree length logging

IMPROVEMENTS—STATEMENT OF MAN-DAYS WORKED

NEW CONSTRUCTION PROJECTS:

Forest	Houses	Garages, Sheds, etc.	Fences	Look-out Towers	Water Supply System	Barns and Stables	Telephones	Corrals	Bridges	Grounds	Trails	Cabins	Tourist Stoves	Fireguard Roads	Radio Portables	Miscel- laneous
Cypress Hills .....	...	2	...	...	...	...	...	4½	152½	...	...	3½	...	...	...	...
Crowsnest	23	31½	...	...	...	14	...	26½	...	31½	...	2	...	...	...	2
Bow River .....	...	34½	...	...	...	2	...	...	...	...	...	63	...	...	...	14
Clearwater .....	...	...	...	...	...	3	...	...	...	...	...	58	...	...	...	...
Brazeau .....	...	26	6	...	...	...	...	...	...	...	...	29	...	...	...	...
Athabaska .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTALS	23	94	6	...	...	53	...	31	152½	31½	...	155½	...	...	...	16

MAINTENANCE PROJECTS:

Forest	Houses	Cabins	Barns and Stables	Telephones	Trails	Roads	Fences	Corrals	Water Supply Systems	Garages, Sheds, Etc.	Look-out Towers and Cabins	Grounds	Hay Meadows & Pastures	Ferries	Bridges	Miscel- laneous
Cypress Hills	111	5	2½	8	2½	13½	4½	1½	2	3	...	10	21½	...	...	47
Crowsnest	98	98	69	314½	157½	127	16	20	6½	25	...	94½	212½	...	...	10
Bow River	19	125½	39	387	472	281½	24	29	14	25	...	89½	237	...	1	16
Clearwater	59	165½	26½	194	360½	94½	102½	55½	6	41½	...	42	112½	2	...	11
Brazeau	60	23	11	161½	167½	4	73½	18	13½	46	10	4	52½	...	37½	54½
Athabaska	31	31	21	136	176	88½	32½	27	22½	29	6	4	86	...	...	31½
TOTALS	280	318	169	1201	1336	609	253	151	64½	169½	16	240	703	2	38½	170

MILEAGE TRAVELLED BY EMPLOYEES OF THE ALBERTA FOREST SERVICE
FISCAL YEAR 1946-47

Divisions	Foot	Saddle	Driving	Speeder	Auto	Canoe	Rowboat	Motorboat	Plane	Railway	Others	Total
Northern Alberta Forest District	30,785	34,098	27,572	9,890	201,626	1,632	179	9,155	1,469	14,020	14,694	345,120
Crowsnest-Bow River Forest	4,640	36,897	3,047	.....	126,602	.....	24	.....	.....	1,342	.....	172,552
Clearwater Forest	4,771	16,736	1,835½	2,550	14,762½	.....	.....	.....	.....	1,405	19,916	62,026
Brazau-Athabaska Forest	10,600	12,789	1,968	3,303	32,718	.....	.....	.....	.....	2,913	1,501	65,792
Cypress Hills Forest	148½	2,365½	365	.....	4,406	.....	.....	.....	.....	1,064	8,757½	16,746½
Radio	62	620	212	.....	14,433	.....	.....	.....	2,184	5,548	255	23,314
TOTALS	51,006½	103,505½	35,049½	15,743	394,187½	1,632	203	9,155	3,653	26,292	45,123½	685,550½

PUBLICITY

Warnings were given to a great many individuals and parties travelling in the forests for health and recreation in the use and care of fire. Warnings and so-called "shorts" were supplied to the different radio stations in the Province before and during the period of high hazard. In addition to the time for which payment was made, a number of stations donated very valuable time without remuneration.

The management of the Canadian Forestry Association assisted by articles in their official publication, "Forest and Outdoors", and by arrangement with the Canadian Broadcasting Company for very valuable publicity.

The Association have also sponsored a truck with sound movie track which toured the settled areas of the wooded sections of the Province carrying a message on forest protection both by lectures and motion pictures. This truck is in addition to the Association's tree planting car that has toured the Province each season for a great number of years.

A number of outlying points were reached by the truck, and they were able in this way to carry the message to points inaccessible to the tree planting car, and it is hoped that the contributions to the Association made by the Province will be continued so as to make this worth-while publicity possible.

NURSERY AND TREE DISTRIBUTION

Progress continues in our tree nursery work and the distribution of surplus stock. However, the area now available at the Oliver Mental Institute will not meet our requirements.

This limitation of space not only handicaps our present activities, but leaves no room whatever for planned expansion to meet afforestation and reforestation projects that are immediately foreseeable in the near future.

There is also the probability that a demand will be made by the joint Federal-Provincial Board to be set up as the Eastern Rockies Forest Conservation Board to reforest some of the areas that are not restocking by natural seeding.

As it takes from three to four years to grow trees with a sufficient root system to insure success, it is strongly recommended that the site selected some time ago be made available without further delay.

Tree Distribution:

The following species and quantities were given out from Oliver in the spring of 1946:

<i>Transplants:</i>	
White Spruce (<i>Picea glauca</i>)	7,800
Sitka Spruce (<i>Picea sitchensis</i>)	12
Lodgepole Pine (<i>Pinus murrayana</i>)	3,630
Scotch Pine (<i>Pinus sylvestris</i>)	4,210
White Pine (<i>Pinus strobus</i>)	10
Red Pine (<i>Pinus resinosa</i>)	10
Yellow Pine (<i>Pinus ponderosa</i>)	15
Douglas Fir (<i>Pseudotsuga mucronata</i>)	2,195
Siberian Larch (<i>Larix sibirica</i>)	20
Green Ash (<i>Fraxinus pennsylvanica</i>)	5,000
American Elm (<i>Ulmus americana</i>)	15,450
Bur Oak (<i>Quercus macrocarpa</i>)	8,180
Red Oak (<i>Quercus rubra</i>)	8,360
	<hr/> 54,892
<i>Cuttings:</i>	
Laurel Leaf Willow (<i>Salix pentandra</i>)	11,540
Golden Willow (<i>Salix vitellina</i>)	10,765
North-west Poplar (<i>Populus</i>)	19,935
<i>Ornamentals:</i>	
Honeysuckle (<i>Lonicera ciliosa</i>)	94
Lilacs (<i>Syringa japonica</i>)	143
Chinese Elm (<i>Ulmus pumila</i>)	29
Mountain Ash (<i>Sorbus americana</i>)	32
Koster Blue Spruce (<i>Picea pungens Kosteri</i>)	12
Cotoneaster (<i>Acutifolia</i>)	2
Elderberry (<i>Sambucus racemosa</i>)	2
Eastern Cedar (<i>Thuja occidentalis</i>)	2
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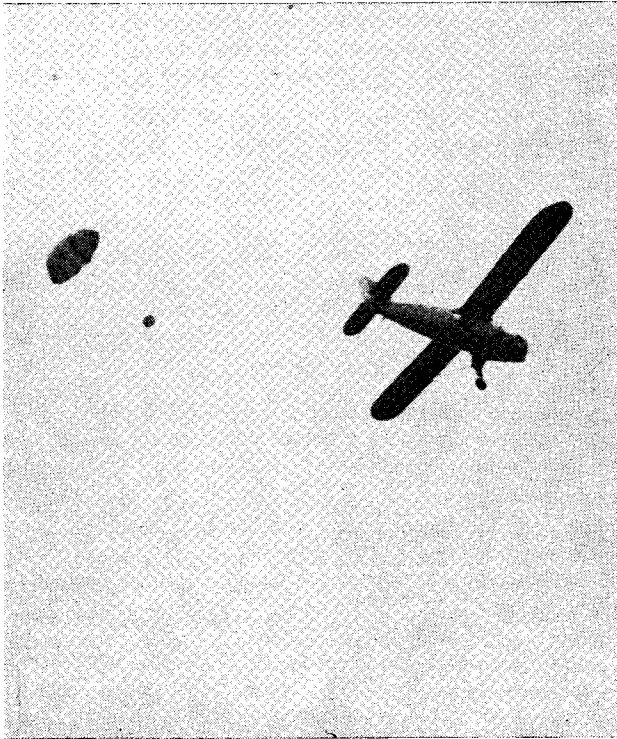
REPORT OF RADIO SUPERINTENDENT, A. EARNSHAW

In the year under review considerable difficulty was experienced in the operation of the radio system as a whole, due to the scarcity of suitable personnel for both tower men and headquarters operators. Mainly on account of this difficulty it was impossible to place all of the lookout towers in operation as early as in previous years, and in some cases it was the end of April before a few of the towers were opened. It is hoped that this condition will not be repeated in future years as it seriously delays the work of fire detection during the period of high hazard. Owing to the fact that snow was rather late in coming in the fall of 1946, most of the towers were not closed until the first of November and one or two of them as late as the 17th of November.

In spite of the number of new and untrained personnel, the detection system had a comparatively successful season with a minimum of delays due to equipment breakdowns.

It is of interest to record the fact that Mr. R. Hook, of the Province of Saskatchewan, acting in the capacity of Superintendent of Radio for that Province, visited here during the year. Ideas in connection with forestry communications were freely exchanged, and it is felt that this visit was of mutual benefit not only from the technical viewpoint but also for a better understanding of each other's problems.

In addition to the regular work of the Branch during the year, considerable research was carried out in connection with fire weather measurements, and these results are being consolidated with results obtained in previous years.



Test drop of food package (note paper wrapper from chute upper left)

In connection with the parachutes developed for the dropping of supplies and equipment referred to in last year's annual report, no use has yet been made of this equipment at a fire, owing to the fact that no fires have occurred in a remotely isolated area that would warrant the use of aircraft. However, in an emergency, fifty gallons of gasoline were delivered to one of the lookout towers late in the season using the parachutes for this purpose.

In the early winter the writer made a trip to Eastern Canada at the request of a radio manufacturer with a view to discussing post-war development of Forestry Radio equipment. While in the east an opportunity was given to observe an airborne magnetometer under actual working conditions, and a report on this instrument was submitted to the Department. It is hoped that with some modification and with further experience in its use, it will be of value in determining the locations of large oil pools. Recent press releases have confirmed this idea.

In addition to the regular maintenance work carried out during the year, installation of the usual radio equipment was made at a new lookout tower which is to be known as the Heart Lake Lookout which is situated in section 29, township 68, range 9, west 4th meridian. It was also necessary to install new radio poles at some of the older lookout towers, and an endeavour has been made to make a more permanent installation by the use of various wood preservatives, heavier guys, etc.

A certain amount of test work using frequency modulation in the 30 to 40 megacycle band was proceeded with, but insufficient time was available to draw any really accurate conclusions from this work. A summary of the year's operations is given below:

LOOKOUT STATIONS—60 Watt and 100 Watt

Station	Engine Time	Gas, gals.	Oil, qts.	Messages	Words
Adams Creek	141/10"	31 ¼	2	407	6,321
*Athabasca	198/20"	15 ½	14 ¼	134	2,431
Brazeau	135/29"	33 ¼	4 ½	651	10,962
Buck Mountain	242/12"	48 ½	5 ½	810	13,379
Carrot Creek	206/31"	56 ½	4 ¾	919	17,627
Coliseum	47/00"	.....	.....	.....	.....
Goose Mountain	252/43"	67	2 ½	1,047	21,191
Lovett	297/05"	57	27 ¾	1,352	25,167
Mayberne	343/15"	67	6 ¾	549	8,407
†Sask. Mountain	293/24"	52 ½	2	541	8,039
Whitcourt	389/46"	116	6 ¾	3,353	68,222
Puskwaskau	259/26"	36 ¼	3 ½	468	7,182
Totals.....	2806/21"	580 ¾	79 ¾	10,231	188,928

*30 Watt Station.

†10 Watt Station.

HEADQUARTERS STATIONS

Calgary .....	.....	.....	.....	4,921	138,147
Edmonton .....	.....	.....	.....	13,033	351,345
Edson .....	.....	.....	.....	3,118	70,071
Grande Prairie .....	.....	.....	.....	3,204	62,979
Lac La Biche	627/11"	135 ¼	15	2,008	49,509
Peace River .....	.....	.....	.....	2,989	84,681
Rocky Mountain House .....	.....	.....	.....	1,066	26,982
Slave Lake	1474/30"	406 ½	29 ¼	1,689	39,717
Total	2101/41"	541 ¾	44 ¼	32,028	823,431
Grand Total.....	4908/02"	1122 ½	123 ¾	42,259	1,012,359

NORTHERN ALBERTA FOREST DISTRICT

Report of Chief Timber Inspector, J. L. Janssen

FOREST PROTECTION

Fire Season and Fire Hazard

The winter of 1945-46 was generally normal as to snow conditions, but whereas in the southern and eastern districts the soil went into the winter in a moist condition, this was not the case with the Slave Lake, Peace River and Grande Prairie divisions, where the ground was very dry when winter set in.

In the southern divisions, spring started quite early with a light fire hazard from April 20th to May 15th, when rains brought the hazard to below normal. The hazard continued normal and below normal for the balance of the season.

The Lac La Biche and Calling Lake divisions had a somewhat later spring, cool and wet, and this condition continued throughout the fire season, therefore the hazard was below normal to normal for the whole season.

The Slave Lake, Peace River and Grande Prairie divisions experienced a very dry spring which brought the hazard up rapidly. The Grande Prairie division received some very good rains during the latter part of June and through July, bringing the hazard to below normal. Periodic showers and cool weather for the balance of the season kept the hazard down.

The Slave Lake division received some good rains in July, thus reducing the hazard through July and August. The latter part of August the hazard started rising again, and very little moisture fell from then to the first snowfall during the latter part of October.

On the Peace River division the hazard continued high throughout the season owing to a very light rainfall. This division and the Slave Lake division went into the winter in a very dry condition.

Fire Prevention

This is attempted through direct contact with the public by the staff, and to a limited extent through the showing of films on conservation, also articles in the press.

In this connection a system of bulldozed fireguards would be a great help in certain areas.

Fire Detection

This is carried out by a network of lookout towers, patrol by rangers and co-operation by the public.

The lookout system functioned very efficiently to the extent of area covered. More lookout towers are urgently needed both at intermediate points between the present towers and an extension northward to cover the northern areas of the Northern Alberta Forest District.

Eight radio and four telephone lookout towers were in operation throughout the season, and it is expected to have the new Heart Lake tower in operation early in 1947.

Fire Suppression

A total of 212 fires were fought and suppressed during the season, covering a total area of 265,693½ acres, of which 179,620¼ acres were non-forested, mainly old burns.

These old burns present a difficult problem, as they are invariably covered with a heavy mat of old vegetation, and once a fire starts it spreads very rapidly.

As in the past, settlers were responsible either directly or indirectly for the largest percentage of our fires, mainly through careless burning operations, especially in broadcast burning.

We also had too many fires started from unextinguished camp fires left by hunters and trappers. More educational effort, and probably stiffer penalties in The Prairie and Forest Fires Act, might tend to remedy this carelessness.

We were fortunate in having very few, if any, lightning fires, as these generally start in inaccessible areas; therefore, the time between discovery and the taking of suppressive action permits the fires to secure a good hold, making them difficult to control.

One of our greatest needs is a modern system of roads and trails to enable us to reach the scene of a fire quickly.

Another urgent need is a caterpillar tractor and bulldozer for each division for fire fighting and trail building purposes.

We were again handicapped by the lack of manpower as very few men will voluntarily fight fires at 15c per hour, and a crew which has been ordered out against their will is of very little use in the suppression of fires.

Personnel

The Inspector and Ranger staff, with a very few exceptions, functioned very efficiently, but of course, as in the past, they have been overloaded and handicapped in their work by exceptionally large districts.

The Inspectors, partly owing to the heavy demand for timber products, were not able to supervise operations as closely as desired, and some applications for timber were also delayed. It is hoped that this situation will be somewhat remedied by the appointment of several Assistant Timber Inspectors.

The Ranger staff continues to be far too small to adequately cover the areas assigned to them. It is suggested that this could be remedied to some extent by the appointment of a number of Assistant Rangers on the more important districts. This would also provide a partly trained reserve of men to draw on in case of vacancies.

No changes occurred in the inspection staff during the summer. However, on November 22nd, Chief Timber Inspector F. W. Neilson resigned to take a more lucrative position in the lumber industry. He was replaced by Inspector J. L. Janssen of Slave Lake, leaving this division vacant for the balance of the fiscal year.

As to the Ranger staff, several changes and new appointments were made. Apparently, in all cases a good class of men were obtained, ex-service men of mature age and with bush experience were chosen to fill practically all vacancies.

A Ranger conference was held in Edmonton, and was again found to be a valuable meeting ground for the exchange of ideas and opinions. This system should be carried on and, if possible, enlarged. In my opinion, this should consist of a general meeting for three or four days, followed by a meeting of each divisional staff at their own headquarters.

Equipment

Some new equipment was obtained, but a great deal more is needed before all divisions can be considered fully equipped. Some bulldozers were requested, but again we were not successful in obtaining them.

Tractors equipped with bulldozer blades are urgently required for the construction of trails and roads to render the districts more accessible and for use in fire fighting.

IMPROVEMENTS

With the very limited funds available for hiring outside labour and the continued pressure of timber inspections and fire fighting activities on the regular staff, very little time was available for improvement work. However, in my opinion, a very creditable showing was made.

Edmonton Division—New Construction

A new road was located and partly blazed to the Brazeau Lookout Tower. Fence posts were cut and hauled for the Drayton Valley pasture, and logs were peeled for the Drayton Valley cache.

Edson Division—New Construction

Culverts were built on the Carrot Creek Tower road at all points necessary, but the road was not completed.

Approximately one mile of new road was constructed to connect the Mayburn Lookout Tower road with existing roads.

Logs were cut, peeled, and skidded to the location on L.S. 6 of Section 16-56-20-W. of 5th Meridian for the Nosehilt Ranger cabin. Also, 120 fence posts were cut for the Cold Creek pasture.

Westlock Division—New Construction

The Whitecourt Lookout Tower road was cleared for 3,850 yards and graded for 3,192 yards, also nine culverts were constructed on this road. It is expected to be able to complete this next season.

A trail was blazed from Hash Lake to the Athabaska River. This will be called the Fox Creek Trail.

Material was obtained and transported to the Whitecourt Lookout Tower site to replace the old tower, as this is becoming unsafe. A well was also dug and cribbed at this tower site.

A hose drying rack was constructed at the Whitecourt cache and the location of the new administration site established.

At the Fort Assiniboine Cache the well was deepened and the grounds partly cleared.

Maintenance

The Whitecourt cache was moved from the old location near the river to the new Administrative site and the Pass Creek trail maintained.

Lac La Biche Division—New Construction

A ranger cabin was constructed on the S.E. $\frac{1}{4}$ of Section 10-86-8-W. 4th Meridian. The Heart Lake Lookout Tower was erected on Section 29-68-9-W. 4th Meridian. This tower is of pole construction, 76 feet high, with lumber cupola. An engine shed 6' by 6' of lumber construction and a log barn 16' by 16' were also constructed at this tower site.

A patrol boat 28 feet long was also built by ranger labour.

Maintenance

The Conklin Ranger cabin was lined with paper and shiplap, and material was purchased for an extension to the Ft. McMurray boat house.

Calling Lake Division—New Construction

A frame ranger cabin 14' by 16' was constructed on L.S. 6 of Section 19-69-24-W. 4th Meridian, and four miles of new trail was constructed through Sections 7, 18, 19 and 30 of Twp. 74-16-W. 4th Meridian near Lawrence Lake.

Maintenance

All existing trails, a total of 86 miles, were maintained.

Slave Lake Division—New Construction

Log walls were erected, windows and doors cut and cased and the floor joists installed for the Swan Ranger House on Section 28-71-9-W. 5th Meridian. This is to replace the old Ranger House, which is beyond repair.

The Ranger cabin at Mile 19, East Prairie trail was completed, also the barn at Goose Mountain Lookout Tower.

A start was made on a canoe shed at Wabasca, a new trail was cut along the Goose River from the Freeman Extension Trail east to within four miles of the West Prairie Trail. A short trail was blazed from House Mountain Lookout Tower north to connect with the McRae logging road and then on to the North Boundary Trail. A trail was blazed along Sandy Creek in the Wabasca area and another short one in the Moose Portage area to a high point known as Malone's Peak.

Maintenance

The Swan Ranger House, Carrot Creek, Wabasca, Swan and McGowan Ranger cabins and the Swan cache were all maintained. All telephone lines, a total of 106 miles, were maintained.

The Moose Lake road east and all existing trails were maintained, also the Slave Lake and Swan Ranger station pasture fences and some miscellaneous projects.

TIMBER

The abnormal demand for timber products continued throughout the year with the consequence that our small inspection staff was again unable to cope with all the demands for inspection of timber applications within a reasonable time, and it was impossible to give the desired supervision to logging operations, even with a great deal of assistance from the Ranger staff. It is hoped that this situation will be somewhat remedied in the near future by the appointment of three Assistant Inspectors.

The cutting of fire-killed spruce for pulpwood purposes brought considerable revenue from a source which previously had been considered as waste.

PROSECUTIONS

A total of 35 prosecutions under The Prairie and Forest Fires Act were instigated by the Service, and convictions obtained in every case.

As in the past we received full co-operation from the Royal Canadian Mounted Police in enforcement of The Prairie and Forest Fires Act and The Game Act.

GAME

Forest Rangers on the N.A.F.D. carried out a great many game patrols, checking for illegal hunting and trapping, also checking on more than 2,600 registered trap-lines, taking applications, adjusting conflicts and disputes, issuing and recommending Beaver and Muskrat Permits, sealing beaver and muskrat pelts and numerous other duties in connection with game and fur.

A number of convictions were obtained for violation of The Game Act and in other cases the information was turned over to the Superintendent of Game, enabling him to obtain a conviction.

CROWSNEST-BOW RIVER FOREST RESERVE

Report of Forest Superintendent, J. P. Alexander

FOREST PROTECTION

The staff of the Reserve was maintained at its authorized strength throughout the year.

(a) Fire Season

Following a long drawn out winter (1945-46) of heavy snow and moderately low temperatures, spring weather arrived about the middle of March, accompanied by wet snowstorms and frequent rains. The weather turned fairly warm and new growth developed rapidly. From May on precipitation was sufficient to maintain growth, and as a result pastures were exceptionally good throughout the season.

Frequent showers and occasional heavy rains occurred during the month of June, but from early in July until August 24th the weather was hot and dry, except for a few brief thunder showers, and during this period a considerable fire hazard developed.

Late summer and early fall were comparatively dry. The heavy rain received late in August supplied sufficient moisture to prevent any serious fire hazard from developing during this time. Early in October a heavy snowfall covered the whole of the Reserve. This snow disappeared under the effect of warm chinook winds, but the soil was left quite wet. Before the end of October more snow fell and by early November there was a heavier covering of snow, for that time of year, along the foothills and mountains than had been known for many years.

(b) Fire Prevention

Prevention activities are only applicable to fires originating through human agencies and consist of education of the public by various means of publicity.

The direct contact of our field staff with users of the Reserve is undoubtedly the most effective method of education and our staff takes advantage of these contacts at every opportunity. Fire posters are placed at all entrances to the Reserve and also at prominent points along roads and trails. Some of the rangers call at schools and at meetings of Boy Scouts and give talks on conservation of forests. Last fall the Canadian Forestry Association, with the aid of personnel of this forest, gave picture shows and lectures, dealing with forestry subjects, in six towns that lie close to the Crownsnest-Bow River Reserve.

(c) Fire Detection

Detection methods have remained the same as in former years and depend on the lookout system and field staff patrols. Last season most fires were very small, and nearly all of them were first reported by hunters and fishermen before they could be seen from the lookouts.

(d) Fire Suppression

A total of 15 fires occurred during the season, 10 of them being inside the Forest Reserve and five on adjacent areas. All these fires were very small and were all suppressed without the aid of fire crews. Many of them were put out by the people who discovered them before they were reported to the rangers. Suppression costs for the entire season were only \$80.18, and this covered both ranger labour and other expenditures.

PERSONNEL

The following changes were made in the field staff during the year:

Castlemount District—Assistant Ranger Russel Eckert was transferred to the Livingstone District, and his place was taken by the transfer of Assistant Ranger F. Perry from the Kananaskis district.

In the fall, Assistant Ranger J. Butler transferred to the Jumping Pound district to replace R. Mackey, who was promoted to the position of district ranger of the East Porcupine district. Butler's place was filled by the appointment of R. A. Huth as assistant ranger on the Castlemount district.

Livingstone District—Assistant Ranger Russel Eckert was transferred from the Castlemount district to the Livingstone district.

East Porcupine District—In the late summer Ranger Gordon Davis resigned, and his position was filled by the promotion of Assistant Ranger R. Mackey of the Jumping Pound district.

Sentinel District—Assistant Ranger R. Mackey was transferred to the Jumping Pound district and his place was filled by the appointment of H. Caton. In the late summer Caton resigned and the position was filled by the appointment of J. Switzer, a former lookout man. Switzer resigned and this position was vacant at the end of the season.

Bighorn District—In the spring J. Mickle, assistant ranger on this district, resigned and his place was filled by the appointment of M. R. Martin.

Elbow District—Assistant Ranger Harold Gordon was not employed last spring and his place was taken by C. S. Comfort. Comfort resigned in about two months' time and he was replaced by William McLeod. McLeod also resigned and this position was vacant at the end of the season.

Jumping Pound District—Assistant Ranger Floyd Smith resigned in May and his place was filled by transfer of Assistant Ranger R. Mackey from the Sentinel District.

Kananaskis District—In the spring, Assistant Ranger F. A. Jones was transferred to the Aura District and Assistant Ranger A. Borton of the Aura district took his place.

FIRE FIGHTING EQUIPMENT

The supply of fire fighting equipment on this forest is sufficient and no new fighting equipment was purchased during the year. Our 2-ton International truck and Caterpillar tractor were about worn out, and these were replaced by the purchase of a 3-ton International truck and a D/6 Caterpillar tractor and trailbuilder.

FOREST ADMINISTRATION

Under this heading are considered timber disposal, grazing permits, grazing and miscellaneous uses, such as surface rights, trappers' cabins, roads, etc.

Timber

The demands for timber, particularly lumber and mine timbers, remained heavy and showed an increase over the previous year. While the production for the year was considerably over the figures for the previous season, it would have been much higher if a number of camps had not been forced to close down during the winter on account of unusually deep snow. Thirty-five sales were in effect, three of which were not operating. The revenue from these sales was \$34,486.95 for the underlisted products:

Saw logs	11,604,448 F.B.M.
Mine Props	2,032,232 lin. ft., under 9"
Mine Props	78,090 lin. ft., over 9"
Lagging	467,895 lin. ft.
Piling	6,346 lin. ft.
Fuelwood	94½ cords, dry blocks
Fuelwood	510¼ cords, edgings and slabs
Slabs	15 cords

During the year 184 permits were issued for a total revenue of \$3,033.26 for material as hereunder:

Sawlogs, green	26,000 F.B.M.
Sawlogs, dry	35,000 F.B.M.
Mine props, under 9", dry	958,564 lin. ft.
Mine props, under 9", green	1,400 lin. ft.
Lagging	34,000 lin. ft.
Fence rails	7,131 pieces
Fence posts	4,975 pieces
Fuelwood, dry	1,004 cords
Building logs, under 9"	12,440 lin. ft.
Building logs, over 9"	7,012 lin. ft.
Telephone poles	1,142 lin. ft.
Roof poles	990 pieces
Fence droppers	1,400 pieces
Laths, dry	50,000 pieces
Fuelwood, green	4 cords

Hay

Only two hay permits were issued during the year, producing a revenue of \$15.75.

Grazing

Grazing conditions during the season were exceptionally favourable for all districts. Precipitation throughout the season was somewhat above normal and, except for a brief July, August dry spell, well distributed and forage conditions were well-maintained.

The demand for range exceeded the allotments and many applications had to be reduced, or in some cases refused. With the existing good stock prices, this condition is expected to continue.

For the year 300 grazing approvals were issued for 21,644 cattle, 1,019 horses and 4,508 sheep, and revenue for the year from this source was \$23,531.90.

Losses of stock, on the whole, were not heavy and about the natural average, with the exception of the North Sheep and Castle River Divisions, where heavier losses occurred. Total losses reported were 162 head of cattle and horses and 39 sheep. While the losses reported were attributable to a certain extent to bears, it is believed that a number of these animals had drifted from the ranges after early snowstorms, and some of them would eventually be accounted for.

Uses

During the year, 130 grazing and miscellaneous use permits were issued for a revenue of \$704.47.

IMPROVEMENTS

The favourable summer season allowed almost continuous improvement work throughout the year, and results compared very favourably with past years.

New Construction

Work was proceeded with on 10 new construction projects during the year. Four of these were completed—Canmore R. S. Cabin, Kananaskis Boathouse, Pekisko Hay Shed and Mill Creek R. S. Corral. Uncompleted were Castlemount R. S. Bunkhouse, Elbow R. S. House, Elbow R. S. Garage, Gap R. S. Garage, Livingstone Forks Bridge and Kananaskis Barn. There were 264½ man days devoted to these projects at a cost in wages of \$1,383.59 and outside expenditure of \$1,540.48.

Maintenance

Existing improvements were on the whole maintained in a satisfactory condition and all maintenance work was completed by reserve labour except for a few days work done by a rented bulldozer on the South Sheep and Highwood roads. There were 2,932½ man days devoted to these projects at a cost in wages of \$14,088.61 and an outside expenditure of \$820.00.

DEPARTMENT OF LANDS AND MINES

STATEMENT OF REVENUE COLLECTED

Timber Sales	\$34,486.95
Timber Permits	3,033.26
Grazing Permits	23,531.90
Hay Permits	15.75
Maps	38.00
Fishing	1,315.34
Game	7,552.33
Grazing Uses	243.95
Miscellaneous Uses	460.52
Suspense	686.56
Total	<u>\$71,364.56</u>

The mileage covered by the entire staff in the course of their duties was:

By automobile	126,602 miles
Saddle horse	36,897 "
By team	3,047 "
By train	1,342 "
By boat	24 "
On foot	4,640 "
	<u>172,552 miles</u>

CLEARWATER FOREST RESERVE

Report of Forest Superintendent, J. R. H. Hall

FOREST PROTECTION

The staff of the Reserve was not fully up to complement as we were unable to secure a full quota of assistant rangers. Furthermore, two district rangers were transferred to the Game Branch during the year, and considerable time was required by the replacements to become accustomed to their districts and the duties required.

(a) *Fire Season*

The mild winter of 1945-46 was followed by exceptionally heavy falls of snow during the winter of 1946-47. Although occasional chinooks occurred there was an average of 20 inches of snow on the ground from October to March, and the Dominion Weather Station at Rocky Mountain House recorded a total fall of 68.08 inches of snow.

The spring was protracted and cold; however, considerable precipitation occurred and new growth was allowed to develop well after the first week in May and sufficient rainfall occurred during the summer months to allow this growth to be maintained.

The late summer and early fall were periods of low fire hazards as considerable moisture occurred, holding the hazard to a minimum. This condition prevailed until the fire season was definitely brought to a close in October.

(b) *Fire Prevention*

Generally speaking, the public utilizing the Reserve for pleasure and camping, as well as the miners and mine operators located on this forest, have given very good co-operation in fire prevention.

(c) *Fire Detection*

No change has been made in the method of fire detection from former years. The lookouts were manned before the start of the fire season and continued throughout the summer.

(d) *Fire Suppression*

A total of 24 fires occurred during the season, six of which were inside the Forest Reserve and 18 in the outside area that is under the supervision of the personnel of this forest.

The total cost of suppression of fires was \$1,745.15, of which \$386.49 was for ranger labour.

A total of 130 burning permits were issued.

Fire Fighting Equipment

The fire fighting equipment such as power pumps, Wajax bags, hand pumps, axes, shovels, etc., proved sufficient to meet our requirements. However, additional equipment, such as light trucks and small bulldozers, is required to build and maintain roads and trails into this forest and also to be used in fire fighting.

Such power equipment would be a great advantage in fire suppression, especially when man-power is scarce and extremely difficult to secure.

Forest Administration

Under this heading we are reporting timber disposal, grazing permits, grazing and miscellaneous uses, such as surface rights, trappers' cabins, roads, etc.

Timber.—The demand for timber showed an increase over last year, and the following list shows the number of transactions during the fiscal year under review:

Active operations	26
Sales not active	2
Lumber, F.B.M.	8,766,104
Railway ties	46,674
Piling, lineal feet	1,296
Mine timber, lineal feet	625,133
Mine timber, dry, lineal feet	842,249
Lagging, dry, lineal feet	138,461
Telephone poles	149

The two inactive timber sales in the above tabulation have not as yet been completed and cancelled, and a small amount of brush remains to be burned before cancellation and release of the deposit.

Eight new timber sales were advertised and disposed of during the past fiscal year.

The timber operators in the Rocky Mountain House and Sundre areas had comparatively little trouble in securing woodsmen during the past logging season. The Brazeau Collieries were not as fortunate, and found it impossible to keep crews in the woods, although they made every endeavour to complete the sales on which they are operating and obtain the timber which they urgently require in their mining operations. Although they paid higher wages than any other camps in the district, they were unable to produce their own requirements and were forced to buy mine timbers and ship them in from the Rocky Mountain House district.

This condition is probably attributable to the depth of snow in the area which is at a higher elevation than other camps.

Grazing.—The snow was very deep and badly crusted during the winter of 1946-47, although the stock seemed to winter well until February when a heavy fall of snow, during which nearly 25 inches occurred, brought about a condition that caused heavy losses among the horses that are usually allowed to rustle during winter months.

The total number of stock grazed during the fiscal year was as follows:

Total number of stock grazed under permit.....	1,597
Total number of horses grazed under permit.....	841
Total number of cattle grazed under permit.....	755
Total number of sheep grazed under permit.....	85
Total number of permittees	85
Average number of stock per permit.....	18.9

Uses.—A total of 27 miscellaneous use permits were granted authorizing trappers' cabins, rights of entry, oil well and camp sites, seismograph roads, etc.

Improvements

The very favourable fire season that occurred permitted a great deal of work to be accomplished during the season, and 128 days work was devoted to new construction and 1,213 to maintenance work.

However, as a result of the heavy snowfall in the autumn of 1945 the rangers were unable to do the required maintenance work, to clear and keep in operation the different telephone lines, and to keep the roads passable.

Small appropriations were granted for maintenance of trails and roads, but necessary labour was not available during the summer and fall and in the winter months snow was too deep.

Sixteen new construction projects were worked on during the fiscal year:

Cabins	3	Pastures	1
Stables	1	Corrals	3
Storehouses	1	Boundary Gates	1
Blacksmith Shops	1	Forest Signs	1
Implement Sheds	1		
Outhouses	3	Total	16

Game

The deep snow did not seem to affect wild life to a great extent. Big game animals came through the winter in fair shape.

Wolves and cougars, although quite numerous, are not reported to have increased during the year.

Recreation

An increase is shown in the number of people using the Clearwater Forest for fishing and hunting, and during the season the personnel sold 183 season permits and 10 three day fishing permits, and also issued 639 travelling permits. These travelling permits covered 1,463 persons.

It is also noted that there was an increase in the number of American hunters during the 1946 hunting season.

Travel

The mileage travelled by the entire staff in the course of their duties during the fiscal year was as follows:

	Miles
Automobile	14,762 ½
Truck	19,916
Railway Speeder	2,558
Railway Train	1,405
Saddle Horse	16,736
Team	1,885 ½
Foot	4,771
Total	62,034

BRAZEAU-ATHABASCA FOREST RESERVE

Report of Forest Superintendent, D. Buck

FOREST PROTECTION

At the commencement of the 1946-47 fiscal year there were two vacancies on the staff which were filled shortly after by the appointment of R. A. Huth, assistant ranger at Coalspur, and G. D. Richmond, assistant ranger at Lovett. Mr. Huth was later transferred to the Crow-Bow Reserve and Assistant Ranger E. R. Stanley was transferred from Mountain Park to take his place at Coalspur to assist with timber inspections in the Coalspur district. The vacancy at Mountain Park was not filled, neither was the vacancy at Entrance caused by the resignation of Mr. R. E. Wright last fall.

It is expected all vacancies will be filled this spring by returned men who have successfully completed the ranger school course in Calgary, which was started last winter to familiarize returned men as much as possible with the numerous duties of a ranger.

This reserve suffered a distressing loss by the disappearance of Mr. Ben Knutson from the Grave Flats lookout during August of last year. In spite of an intense search by a large party, until a heavy fall of snow forced the abandonment of further search, no sign of him was found. Mr. Knutson was highly esteemed by all who knew him and his loss, especially under the very unusual circumstances, is very much regretted.

(a) Fire Season

After a normal winter with an unusually warm March, followed by a prolonged dry spell which was the direct cause of 37.5% of the total fires for the season to break out during May, the weather changed to a normal summer and fall.

The Brule fire was the most expensive in respect to cost of suppression as well as causing the greatest loss of timber.

A total of four fires broke out in and in the vicinity of Coalspur railway yards. Although no damage to standing timber resulted, property loss was high, as two of the fires started in loaded box cars of coal causing the total loss of several cars and damage to others. Another fire resulted in the loss of a dwelling, making it necessary to patrol the adjacent timbered hillside extinguishing spot fires. A fire broke out from the old Yellowhead mine workings. This fire had burned under a portion of the recently completed Branch Highway and burnt the timbers used in the retaining wall.

The annual statement of fire losses for the 1946 season shows a total of 24 fires extinguished and reported on. These fires are subdivided into the following classes:

Class	Brazeau Reserve	Athabasca Reserve
A	10	7
B	4	.....
C	2	.....
D .....	.....	1
Total.....	16	8

(b) Fire Detection

No improvement has been made in the method of fire detection during the past year. However, more modern facilities of patrol on the Brazeau Reserve were added by the purchase of a light delivery truck which is used to very good advantage during high fire danger periods to patrol highways.

This additional and much faster method of travel has proven very successful, especially during the hunting season when hunter's camps were visited, licenses and kills checked, also where it was thought advisable, a warning was given regarding their camp fires.

With the prospects of a considerable number of campers using the newly constructed Imperial Oil road which extends 70 miles north-west from Entrance through the Athabasca Reserve, a system of patrols will necessarily have to be established.

Prior to the construction of this road, the Athabasca Reserve has been practically closed to the fishermen, hunters and campers using cars; apart from a few miles out of Entrance, there were only secondary wagon roads, preventing the use of this Reserve to the fullest.

The Athabasca Reserve is noted for the great number of scenic and beautiful spots as well as for fishing and hunting, and the Imperial Oil road has opened

this hitherto little known area to the public, who could ill afford the great expense of a saddle and pack horse party.

This opportunity is taken to express the thanks of the personnel of the Brazeau-Athabasca Reserves for the excellent co-operation shown by mine officials, residents of the Coal Branch, and the outfitters using the Athabasca Reserve. They have given this Branch of the Service excellent co-operation at all times during the year under review.

The mileage and methods of travel by the staff of the Brazeau-Athabasca Reserve for the past fiscal year is listed as follows:

	Miles		Miles
Auto	32,718	Raft	17
Speeder	3,303	Bus	232
Foot	10,600	Snowshoes	378
Train	2,913	Team (horses)	1,968
Saddle horse	12,789		
Dog team	874	Total	65,792

IMPROVEMENTS—BRAZEAU FOREST

New Construction Buildings

The Leyland barn was the only new construction project commenced this year, although not completed; all material has been purchased.

This building will be of log construction, 20' × 24' with hip roof of lumber, covered with asphalt roofing and lumber floor loft. At March 31st the log work was completed, including floor joists for both ground floor and loft.

The Leyland administration site was moved, six years ago, from the Grease-bone cabin site. This barn completes the buildings necessary at the present site.

The Lovett lookout cabin, which was authorized the previous year, has been completed. This cabin is a departure from the usual cabin for this purpose; as Lovett tower is situated close to a mining town and cars can approach within half a mile, it was considered very suitable for a married man, consequently the new cabin was planned for a married man's quarters with a kitchen, sitting room, bed-room and office. Construction is of lumber throughout, with a brick chimney and Tentest for interior insulation.

The following is a statement of days worked and ranger labour cost for maintenance and new construction for various projects in the Brazeau Reserve:

NEW CONSTRUCTION

	Days	Amount
Buildings (1 cabin, 1 barn)	92	\$ 421.80
Miscellaneous	14	75.00
Total	106	\$ 496.80

MAINTENANCE

Buildings	150	\$ 672.11
Telephones	161½	724.44
Roads and trails	209	922.08
Miscellaneous fences	122	519.89
Miscellaneous	90	389.35
Total	732½	\$3,227.87

IMPROVEMENTS—ATHABASCA RESERVE

New Construction—Buildings

Three caches were authorized for this Reserve, but apart from assembling material at the sites and the ground work started, little progress has been made.

The following is a statement of days worked and ranger labour cost for maintenance and new construction in various projects on the Athabasca Reserve:

NEW CONSTRUCTION

	Days	Amount
Buildings (3 cabins)	64	\$ 330.05
Total	64	\$ 330.05

MAINTENANCE

	Days	Amount
Buildings	118	\$ 617.08
Telephones	136	701.03
Roads and trails	264½	1,273.47
Miscellaneous fences	116½	599.90
Miscellaneous	87	447.60
Total	722	\$3,639.08

MISCELLANEOUS USES

A total of 114 general permits and 28 leases were issued during the year.

It is suggested that the leases be reviewed and where possible consolidated. For instance, the McLeod Hard Coal Company have three leases and one permit for the Company's townsite at Mercoal, and the Cadomin Coal Company Limited townsite has been covered by General Permit for some years pending the issuance of a lease.

Several coal companies have investigated the possibilities of strip mining on their properties, and have met with considerable success. There are three strip mines in operation on the Mountain Park subdivision, and applications are on hand for four others, but there has been some delay in this regard due to the proposed organization of a new Board to deal with applications of this nature which previously were made to the Board of Public Utility Commissioners.

FOREST MANAGEMENT

The output of forest products compares very favourably with the previous year. Although there is a decrease of \$5,624.27 in revenue the total manufacture from all products is higher. The principal reason for the decrease being the change from the payment of dues on manufacture to that of sales in practically all Timber Sales awarded during the year, also at completion of operations several large guarantee deposits were applied to dues.

The production of railway ties shows an increase, but due to the shortage of railway cars, inspections and loadings were suspended in January, consequently most of the ties manufactured last winter were on hand at the end of the fiscal year.

In practically all cases where spruce timber is being manufactured, the stand is over-mature and the timber has commenced to deteriorate. There remains a large stand of this over-mature spruce on Oldman Creek in Townships 53, 54 and 55, Ranges 23, 24 and 25, west of the 5th Meridian. Although a start has been made by Swanson Lumber Company Limited in this area it is hoped that more rapid utilization of this over-mature timber is made while prices are high, the market is good, and grading is not too strict.

The reproduction of pine is excellent. Many acres of lodgepole pine, estimated to average 45 years of age on both the Brazeau and Athabasca Reserves is making very satisfactory annual increase in size, and in approximately 15 years it should be possible to commence a sustained yield programme in this timber.

An increase in revenue for the numerous uses granted (other than for timber) shows a total of \$4,632.41. However, the decrease in revenue from timber totals \$5,624.27, or an over-all drop in revenue of \$1,858.14.

The following is a list of material manufactured from 52 active Timber Sales within the Brazeau-Athabasca Reserves during the fiscal year ending March 31st, 1947:

Lumber, F.B.M.	15,571,744
Railway ties	252,284
Tramway ties, 5ft., L.F.	15,336
Mine timber (green and dry), L.F.	744,301
Building logs, L.F.	1,216
Slabs, cords	965
Round lagging, L.F.	78,004

Grazing

Under this heading an increase in revenue of \$469.44 is recorded, which is considerable, when the total revenue for grazing amounted to \$1,574.01 for the entire fiscal year under review.

This increase is due to an order being issued by the Jasper Park authorities that grazing for horses within the Park boundaries would not be permitted after last fall, making it necessary for the outfitters who had grazed their stock in the Park to make other arrangements, and several placed them on the Reserve.

The outfitters' horses account for perhaps one-third of the entire number of horses grazed within the Reserve; the other two-thirds belong to individuals who keep a small string of horses for their own amusement. Many miners own from one to five head of horses and use them occasionally for short trips, fishing or hunting. Of the cattle accounted for, 46 belong to dairies.

Game and Trapping

In spite of a hard winter the big game appear to have come through thin but healthy except that many old bull moose died off. The general opinion of the rangers is that the number of big game remains nearly the same with an increase shown in Elk, in fact it has been suggested by rangers north of the area where elk may be taken that the Athabasca Reserve also be included in this area, for these animals are increasing rapidly.

As the elk are very destructive and enjoy feeding from hay stacks more than other big game, it is my opinion that it would be better to hold their number down by extending the permissible hunting boundary north to include the Athabasca Reserve rather than keeping the area closed until elk become a nuisance as they have in other parts of the Province.

Upon recommendation from this office 98 certificates for trapping areas were issued in the Brazeau-Athabasca Reserves and area north. These certificates cover trapping areas only, as no lines are recommended.

Fur bearing animals are quite plentiful and a large variety of species are taken annually. Those trappers whose areas include the higher altitudes are assured of their limit of marten, but in most cases these men are not recommended for the taking of beaver under Special Permits, as the terrain is not suitable for beaver and they are not present in sufficient numbers to warrant permission being granted, whereas the trappers further east from the mountains have beaver on their areas and are permitted to take a specified number as recommended by the ranger in charge of the district in which their registered area is located. In most cases those trappers who are permitted to take beaver do not have marten on their areas.

CYPRESS HILLS FOREST RESERVE

Report of Ranger-in-Charge, J. D. Champion

FOREST PROTECTION

Fire Season

The past season was colder with greater precipitation than during the preceding three years, and this held the fire hazard to a minimum. For a short time in July the forest was very dry, but fortunately no fire occurred during this period.

Detection and Suppression

We depend to a large extent on the ranchers and farmers living close to the Reserve who are connected to Reserve Headquarters by telephone for fire

detection. As we are connected either by our own lines or switch to local party lines on all sides of the Reserve, this is found to be an effective means of detection.

Fire Fighting Equipment

One gasoline fire pump and sufficient tools to equip a crew of over a hundred men is on hand. All equipment is in good condition; the pump is in good working order, having been tested several times during the summer. As mentioned in previous reports, a need exists for a tractor and bulldozer to build more fireguard roads. This work should be attended to without delay, as the wooded area on this Reserve is not large and even a small fire could prove very disastrous.

FOREST ADMINISTRATION

The Cypress Hills Forest Reserve is situated in the centre of a ranching and farming district and is accessible at all points, making it necessary to spend considerable time on supervision; during the summer months a complete patrol of the Reserve should be made at least every other day. At present we have not the necessary help to enable us to do this work. It is suggested that the ranger be supplied with more help.

The method of travel and mileage is listed below:

Truck	8,729½ miles
Saddle horse	2,365½ "
Walk	148½ "
Team	365 "
Private car	4,046 "
Train	1,064 "
Other means	28 "
Total	16,746½ miles

Game

Game conditions remain about the same as last year—the deer appear to be migrating from the Reserve and coyotes are very numerous. The beaver are steadily increasing and going out into the small streams in the prairie regions. The past winter was exceptionally severe on deer; the snow was deep and crusted, making it more easy for coyotes to prey on these animals, and a large number were killed by these predators.

The deer did considerable damage to feed stacks. Several schemes were tried to keep them out. It was found that deer hides freshly skinned and hung on fences or on sticks around the stacks were effective in keeping the White Tail Deer away. However, the Mule Deer was not so easily frightened, and it was found necessary to fence several stacks with woven wire. The fencing was placed about two to three feet from the stack, the deer being afraid to jump.

It is again suggested that this Reserve be turned into a game management area. Under this arrangement restricted hunting could be allowed and the increase in fur bearing animals could be trapped by the Department, bringing in considerable revenue and curtailing over-population.

The Game Commissioner issued instructions to have 100 squirrels live-trapped and shipped to Cypress Hills. Unfortunately, press of other work has not allowed the time for this undertaking.

Timber

Timber cutting slackened off slightly during the year, due possibly to the season. The wet weather during the summer made it necessary for the farmers to spend their time on the land when the weather was fit, and snow conditions during the winter made it impossible to work in the bush.

Timber cut and revenue derived therefrom as follows:

Sawlogs, green spruce	1,059 pieces
Pine poles	10,210 pieces
Poplar poles	13,217 pieces
Poplar posts	3,000 pieces
Willow posts	8,825 pieces
Fuelwood	292 cords
Sawlogs, green poplar	6,400 F.B.M.
Green poplar, 6-12" butt	1,348 lineal feet
Green pine thinnings under 3"	2 cords
The total revenue amounted to	\$2,489.95

Silvics

The seed crop throughout the Reserve was fair to good last season. Two sacks of white spruce and one sack of lodgepole pine cones were picked and shipped to Edmonton.

The insect rangers from Winnipeg made a tour of the Reserve early in June, and Mr. Parker of the Dominion Forest Service spent several days measuring the trees on several sample plots in October.

Continued improvement is shown in brush disposal. We are insisting on larger piles being made, thereby making it possible to burn in deeper snow.

Grazing

With the high prices being paid for beef more farmers are raising cattle and there is a greater demand for grazing on the Reserve. The allotment for the Reserve is filled to capacity and it has been found necessary to turn down applications.

Growing conditions were very good throughout the season and there was a good carry-over of forage. However, there are one or two over-grazed areas on the Reserve. The Associations are co-operating in trying to keep the stock driven back on to better range.

There are 3,400 head of cattle and horses grazed under permit. Cattle permits for five months and horse permits for seven months only are issued. It is thought that improvements in the handling of stock and grazing conditions could be made. It is suggested that a stock rider be employed to cover the three grazing divisions on the Reserve. It is felt that if some of the small brush growing on the bench land was cut, grazing conditions would be improved to the point where the allotment could be increased.

The past winter was long, with snow from September to after the middle of April. Spring broke quickly, and by the opening day of the grazing season the grass was well advanced. Some stock entered the Reserve in very poor condition.

Miscellaneous Uses

A number of ranchers and farmers adjoining the Reserve rent pasture land, watering and feeding grounds on the Reserve. All these uses are held under yearly permit. It would create a severe hardship on some of the permittees if these uses were not granted, as they have neither water nor adequate shelter on their own property. All the pasture areas are more or less isolated, and the grazing permittees are pleased to have them fenced off thereby eliminating pockets for stock to hang in.

Total number of permits issued and revenue collected are listed below:

Timber Permits	222	Revenue Collected	\$2,489.95
Grazing Permits	60	" "	2,780.77
Summer Resort Permits	23	" "	120.32
Miscellaneous Uses Permits	18	" "	143.20
Antelope Licenses	7	" "	35.00
Fur Tax collected			31.32
Sale of house claimed for arrears in taxes			60.00
Total number of Permits	323	Total Revenue	\$5,660.56

Improvements

Owing to weather conditions and the private outfit we had hired being available only at certain times, it was found extremely difficult to get our fire-guard maintenance work done. We had to be ready to work at a moment's notice, either when farm work slackened or when weather conditions would not permit harvest work and yet were not damp enough to interfere with road work. With the exception of the Battle Creek fireguard road and the Benson Point fireguard road, all fireguards were worked. Telephone and building maintenance was carried on. The telephone line from the ranger station east to the Hansen Place should be rebuilt, and it is hoped this work will be undertaken during 1947.

Should it not be possible to supply this Reserve with a small caterpillar and bulldozer, it is suggested that a Fordson be supplied for use with our light maintenance equipment. The following statement will show how the ranger's time was divided on the various maintenance projects, and the cost in ranger labour:

Telephone lines	8	days	\$ 36.46
Buildings	10½	"	44.97
Grounds	10	"	41.80
Fences and corral	8½	"	35.78
Water supply	2	"	8.26
Brush disposal	26½	"	108.94
Elkwater Summer Resort	2½	"	11.53
Trails	2½	"	11.23
Roads	13½	"	64.98
Other projects	18	"	78.12
Total	102	days	\$442.07

Personnel

The Ranger-in-Charge has been promoted to Headquarters Ranger on the Clearwater Forest, and R. Mackey has been promoted from District Ranger on the Crow-Bow Reserve to take charge of the Cypress Hills Reserve. It is suggested that more help be employed, at least during the summer months.

Recreation

Elkwater Lake and Graburn Gap are the two most attractive places in the Reserve, the rainbow trout fishing and the annual picnic being the main attraction at Graburn. With prospects of an all-weather highway from the Trans-Canada Highway to Have on the American side, Elkwater Lake Summer Resort should be a very popular place in a few years' time, as it is the only attractive place in the southern part of the Province east of Waterton Lake.

A water system and more streets cleaned of brush and built up are two projects urgently needed at Elkwater.

Publicity

Press of work has not allowed the writer to visit the schools in the neighbourhood this spring. However, the field day organized two years ago to interest children in woodlore and sports will be held again this year.

The children are extremely enthusiastic, and the interest they have taken in woodlore is very encouraging.

It is noticed, however, that some parents feel that this field day is a waste of time, which would lead one to believe that a great deal more time should be spent visiting schools over the whole Province, teaching the children something of woodlore and wild life so that they may grown up with a clearer understanding and a wider outlook on our natural resources.

Last year over 300 children took part in the woodlore contest and field day, representing 23 schools, all of which were visited by the writer, who gave the children a short talk on the forest and wild life.

Fish and Game Administration

Report of Fish and Game Commissioner, E. S. Huestis

The keynote of the activities of the Fish and Game Branches for the fiscal year 1946-47 should be one of co-operation. During the year representatives from the Branches attended numerous conferences and meetings where contact was made with officials of other provinces, the Dominion and the Fish and Game Associations.

In June, 1946, we were invited, for the fourth consecutive year, to attend the annual convention of the Saskatchewan Fish and Game League, which was held in Nipawin, Saskatchewan. This progressive little town became famous during the following winter by holding one of the most expensive curling bonspiels in the history of Canada. Our contact with the sportsmen's organization in Saskatchewan has always been good. We have passed on what we felt were the best of our ideas from this Province, and in turn we have picked up some of the best of their ventures and have made good use of them in formulating policies and regulations.

On September 27th and 28th, the Fisheries Branch was host to a conference of Provincial and Dominion Park officials in an endeavour to work out co-operatively the problems of fish culture of sporting fish in Alberta. In addition to our own Fisheries personnel, the three National Parks, Jasper, Banff and Waterton Lakes, were represented by their Fisheries Superintendents and also by a senior member of their Warden staff. The keynote of our conference was to seek to make Alberta, through the Province and the Parks, as nearly self-sustaining as possible in the production of fish eggs. Co-operative arrangements have been in effect for some years between Banff Park and the Province in the production of Rainbow Trout eggs at Kananaskis Lakes, and this scheme was to be further augmented by similar ventures within the National Parks. In addition, each administration was to study their potential egg supply with the purpose in mind of supplying any surplus that they might have of any particular species to the other administration and avoid, as far as possible, the purchase of eggs from sources outside the Province. The officials assembled also went into a detailed study of hatchery practices, fish food, particularly the question of supply which has become limited due to the demands from Europe for certain types of feed, the training of scientific personnel and the problem of transportation of fingerlings and yearling fish to angling waters.

Two days later, on September 30th, the Fisheries Branch played host to the annual meeting of the three prairie provinces, the Dominion Fisheries Branch and the Fisheries Research Board in a study of the Fish Inspection Regulations. This meeting was considered to be one of the most successful that had been held.

In January, 1947, the Branches were well represented at the annual meeting of the Alberta Fish and Game Association at Red Deer, where contact was made with the sportsmen of the Province. A report was given to the convention, and numerous questions were talked over as between departmental officials and the sportsmen leading to closer harmony with the law enforcement officer. The Association has grown during the last few years, and has a membership close to 50% of the number of bird licenses sold.

This meeting was followed immediately by a meeting of the Western Canada-Yukon Fish and Game Association, to which a representative from the department was invited. The Game Commissioners from British Columbia, Saskatchewan and Manitoba attended this meeting, and allowed the opportunity

of a further exchange of ideas between the Game Administrations of the various western provinces in their handling of the problems relating to the sportsmen.

In February, 1947, the bi-annual meeting of the Dominion and Provincial Wildlife officials was held at Ottawa, and the effect of the contacts made with the western administrations was very evident at this meeting. Problems discussed at the Ottawa conference were numerous, but it was found that the approach to these problems was similar throughout the western provinces, which was not always true of the provinces farther to the east.

During the year the main issues arising in the administration of the Fisheries Branch seemed to be:

1. The apparent lack of sport fish in the streams of western Alberta in spite of years of planting of small fish.
2. The growth of the fur farming industry and its demands for fish food.
3. The problem of too many commercial fishermen.
4. The problem of whether to use certain lakes for commercial fishing or to reserve them as an attraction for the tourist industry.

1. In order to study the apparent lack of angling fish in the waters of the East Slope of the Rocky Mountains, a study was made of certain streams, particularly the Elbow River. A resume of this report is given by the Superintendent of Fisheries, and it would appear that the natural conditions within the streams is the greatest problem we are facing, and unless this problem can be overcome to some extent our planting campaign may be of little value.

2. At the close of the war many returned men used their gratuities to start up in the fur farming business, particularly mink. In addition, many other people, feeling that there was a ready and immediate profit in the fur farming business, took up this occupation, increasing the number of fur farms and the number of animals within the Province by a large percentage. During the same time the demands from the countries of Europe for cheap food took away various sources of food supply which had been available to the fur farmers, and they were forced to rely more and more on the taking of coarse fish from our lakes. This was further aggravated by the fact that many people starting up in business and having a small capital were not in a position to buy feed, but could take out a fishing license and secure their own food supply in this way with very little cost. The result has been that many of our lakes are being over-fished, and a warning has gone out to the fur farmers that they will have to cut back on the amount of coarse fish taken from these lakes or we will face a serious situation where the lakes will not produce sufficient food, or they may be depleted entirely. It is interesting to note that when a lake starts becoming depleted it usually fishes quite heavily during that period. As a result, the warning issued by the department is not readily acceptable to the fishermen or the fur farmers, and it is difficult for them to realize that although the fish they are taking are coming out in good quantity, they are taking increasingly younger fish each year, and will eventually take out the brood stock and it will take several years for the lake to recover.

3. During the war years the demand for our commercial fish, particularly whitefish, increased to the point where the price paid at the lake was far in excess of the value of the fish. Taking into consideration the cost at the lake together with transportation out of the Province, usually to the Eastern States, the retail price at that point would, under ordinary circumstances, have become prohibitive, but during the war, with ready money, the demand kept up regardless of the price.

This high price attracted many people to the commercial fishing business, people who had never fished before and who were not what might be termed

"commercial fishermen" but were only in the business temporarily as long as the price remained high. As a result, far too many licenses were issued on some of our lakes, and it was found that the gross proceeds per license were so low as to make it impossible for the fisherman to pay for his gear, his license and his time, and many of them apparently lost money. In spite of this, the demand for licenses has kept up and on lakes where a hundred fishermen could easily take out the allotment a thousand fishermen took out licenses, and the commercial fisherman, who, in the past, was able to eke out an existence, was able to fish his small portion for a few days, and the allowance on the lake was taken out and he was forced to seek other places to fish. This is not a healthy situation and will cure itself when the price is reduced, but in the curing many people will have lost the money they put into gear and some of the expenses of their operations.

4. During the years of the war our tourist business fell off considerably, and due to the shortage of gasoline and tires our own people were unable to move any great distance to visit some of our more attractive angling lakes. As an example, Cold Lake in eastern Alberta was at one time a very great attraction to tourists and our own people for the taking of the famous Cold Lake trout. During the years of the war the commercial fishing on the lake increased and angling decreased. An examination was made of the lake, and it was determined that unless the commercial fishing was decreased and eventually cut out entirely, this lake would be lost to us as an angling lake and as an attraction to tourists and a pleasure resort for our own people. The lake is not a good commercial lake, and as a result it was decided that the commercial fishing on this lake should be very sharply reduced in the next two years to save the trout population and to build it back into a tourist attraction, which it is felt would be more beneficial to the Province.

During the year under review the Game Branch was enabled to double its field staff by the appointment of five additional Game Inspectors, located at St. Paul, Vermilion, Camrose, Coronation and Pincher Creek. Due to the large areas required to be covered by a few Inspectors, there is still a considerable amount of territory which is not adequately supervised. The addition of the five men, however, has helped very materially, and although they are spread very widely, it is safe to say that the supervision of game activities will be increased considerably by their employment.

This report commenced on a keynote of co-operation. It is desirable that particular reference be made to the co-operation as between the department and the Alberta Fish and Game Association with its various locals throughout the Province. The department has recognized this additional co-operation by increasing the annual grant to the provincial organization, and in 1945 this amounted to \$500.00. In the year 1946-47 an arrangement was made whereby the Government was prepared to increase this grant on the basis of membership in the Association; for each 50c membership paid in by local Associations to the provincial organization, the Government was prepared to match this amount on a 50-50 basis up to an amount not to exceed \$5,000.00 in any one year. On the basis of membership in 1945 the grant to the Association in 1946 amounted to \$1,632.00. The Association is making use of this money to carry on an educational programme amongst the sportsmen and the coming sportsmen of the Province in an endeavour to have a conservation-minded shooting public.

A further use for some of the funds is the administration of the predator campaign against crows and magpies. In this campaign the Government pays the entire costs of bounty at five cents per pair of feet of both crows and magpies, and the Association carries on the administration of the campaign through their local Associations. In this way, the local Associations are given an opportunity of taking a keen interest in the cutting down of these predator birds, and

it creates a lively interest in the affairs of the Association. During the year under review the amount paid to the Alberta Fish and Game Association for the destruction of crows, magpies, goshawks and owls amounted to slightly over \$10,500.00, payment being made for goshawks and owls at twenty-five cents each during a winter campaign, when a drive was made on these two predators as well as the magpie which remains with us during the winter.

During the winter of 1946-47, stormy weather drove large numbers of elk and deer from Waterton Park and the adjacent game preserves on to the farms and ranches of the Twin Butte district. The damage caused by elk was largely confined to one ranch, and although considerable damage was done to stacks and to portions of the range, every effort was made by the Department to take immediate action when the complaint was received, and special permits were issued to the ranchers in the district for the taking of these animals out of season, and in addition, one of our Inspectors was immediately placed at the point of danger to supervise activities.

As in the case of elk, so in the case of deer, which concentrated on a ranch farther to the west where they destroyed the greater percentage of a large stack of oat bundles. A number of the animals were destroyed in an endeavour to chase them back to the Park and the game preserve, and finally, through the co-operation of the Olds Fish and Game Association, 154 of these animals were rounded up and trucked to the area west of Olds and released in new territory. The Olds Fish and Game Association should be given a great deal of credit for the manner in which the transportation of the deer was effected. Care was taken in the selection of proper trucks, which were designed so as to give three sections, separating the animals to avoid crushing, temporary tops were installed and the entire truck was enclosed by canvas covers to keep out the light. By this means the animals were transported to their new location with the loss of only one animal which died in the round-up corral prior to being loaded on the truck. It might be of interest to note that after the deer had been established in their new location we received one complaint from a farmer who found that they were so tame after handling as to stay around his farm to the detriment of his garden.

The question of elk damage has been discussed with the authorities at Ottawa, and they have realized the necessity of taking action to reduce the elk herd within Waterton Park to some extent to avoid a repetition of the damage caused in the spring, and they have agreed to take whatever action is necessary for the reduction of the elk within the Park.

The distribution of pheasant chicks throughout the Province was continued during the year. Just over 12,000 eggs were collected in the Eastern Irrigation District, eggs which would have been destroyed by the cultivation of fields and the burning of ditches, and these were placed in our electric incubator. They were later transferred to our brooder houses containing electric brooders and enclosed pens, and raised to six to eight weeks of age. The Sportsmen's Associations again offered their co-operation in the distribution of these birds to fifty different points in the Province. Experience has shown, however, that it is wiser to plant a greater number of birds in a smaller number of areas to ensure adequate stocking of each area. It is proposed, therefore, that for the following year five or six selected areas be chosen as to their desirability for the introduction of pheasants and that approximately 500 to 1,000 birds be released in each area.

The introduction of pheasant stock from our hatchery poses a question in regard to the handling of birds after they are planted in the area. It is known that the birds produced at the hatchery will run approximately 60% cocks and 40% hens. In order that there may be a reproduction the following year it is necessary to reduce the number of cocks drastically to a ratio of approximately

six hens to every one cock in the area. If this reduction is not made, then there is very little hope of reproduction on a natural basis. It is very difficult for the average layman to realize that a short open season becomes necessary under conditions of this kind. A study of conditions in the raising of this or similar birds in the old country shows that after the hunting season is over for the year, gamekeepers are instructed to go into the fields and shoot every cock pheasant that can be located. If this is done, it is proved over years of experience that there are still sufficient cock birds in the area to make up the desirable sex ratio.

The department has continued during 1946 to pay a bounty on wolves, cougar and coyotes. During the spring, summer and fall months from April 1st to October 15th a bounty was paid on wolves in the amount of \$25.00 and on coyotes in the amount of \$3.00 each. Throughout the year \$15.00 was paid for the cougar. At the February meeting of the Dominion-Provincial Wildlife Officials at Ottawa, the question of the payment of bounty was very carefully considered, and it was the unanimous opinion of those at the meeting that the payment of bounty on wolves and coyotes was not a solution to the problem of eradication of these animals. It was felt by all those who administer such funds that a great deal of money is expended to pay for the taking of wolves and coyotes which would not be menacing either big game, fur bearing animals or domestic stock. Examination of the system used in the United States has shown that their administrative officials are of the same opinion. In some States of the Union they have hired trained wolf and coyote hunters with the idea of concentrating the activities towards the destruction of these animals in the area in which the damage is being done rather than by the destruction of animals throughout the entire State.

An examination of the American system of employing trained hunters showed that it was having some success, and as the Department had received numerous complaints, particularly from Sheep Breeder Associations throughout the Province with regard to the destruction of sheep, an attempt was made by the Department to work out a similar system within this Province. We had in mind the hiring of trained coyote hunters in the districts where the damage to sheep and other live stock was reported to be at its worst. The Department was to pay a monthly wage to be considered as part of the payment to the hunter for his work, and in addition the Sheep Breeders and other Associations throughout the Province were to take steps to raise sufficient funds to pay a bonus on each coyote taken, the two payments, one from the Department and one from the Association, being sufficient to interest the hunter in carrying out his work. Unfortunately, the Associations were unable to work out any scheme whereby funds could be raised for this purpose, and as a result the whole scheme was abandoned.

For the past two years the duck population within the Province has become smaller each year. This is borne out by surveys made by the United States Wildlife Service, Ducks Unlimited and our own personnel. In spite of this, it is found that concentration of ducks in certain areas is causing damage to farmers' crops, particularly in irrigation districts where a great many seed crops are raised. A number of years ago, through the efforts of the Department, a clause was placed in the Migratory Birds Convention Act whereby a permit could be issued by the Minister of Mines and Resources at Ottawa covering any one of the three prairie provinces or any part thereof. This permit allowed the farmer within the area where ducks were causing damage to his crops to request any outside hunters from nearby towns or cities to assist him in the scaring of these ducks from his land. The farmer was required to give each person written permission to shoot on his land, and a copy of such permission was required to be sent to the Game Office in Edmonton. This clause in the Regulations was

urgently required by farmers in some areas, but unfortunately, when the permit was obtained for the Province both in 1945 and 1946, it was not lived up to by either the sportsmen or the farmer in all cases. Certain sportsmen and farmers abused the authority given to them to carry on hunting activities ahead of the regular season, using as an excuse the alleged damage to crops, which in some cases did not exist. Very few farmers who gave written permission to the hunter filed a copy with the Game Office, and as a result action had to be taken against certain individuals for infractions of the Regulations set up. It is regrettable that the actions of certain people may have the effect of cancelling a regulation which is so urgently required for the protection of crops.

Co-operation with the Game Administrations of the other western provinces, and where it is necessary, with the eastern provinces, continues. The bi-annual meeting of Wildlife officials at Ottawa brings the Game Commissioners of the various provinces together, and it is felt that a great deal of good is done by having the various officials travel together to and from Ottawa and discussing numerous subjects which arise from time to time in the handling of wild life within the various provinces. These trips are not only interesting but very beneficial, and many of our difficulties as between provinces are worked out long before we reach Ottawa, and this saves time in the handling of the general meeting.

The three prairie provinces have very similar conditions throughout and have been working in very close harmony. We have a uniform fur royalty applicable to the three provinces, and we have a reciprocal agreement whereby a person holding a resident bird license in any one province may secure a similar license in the adjoining province by the payment of the usual resident fee.

Th three prairie provinces are still further linked together in the handling of the fish infestation problem, and numerous meetings have been held with representatives from each province to work out and submit for the consideration of the Department at Ottawa the best regulations which can be obtained for the handling of this very important phase of our activity.

It is hoped that as the years go by there will be even closer harmony, that the uniform royalty which now exists as within the three prairie provinces can be extended to all provinces in the Dominion, that the eastern provinces will join with us in attempting to solve the problem of fish inspection, and that in the setting up of regulations by each province there will be contact with their neighbors in order to have as little confliction as possible. Wild life knows no barriers and the bird or animal who lives in Alberta today may be in Saskatchewan or British Columbia tomorrow.

GAME BRANCH

Report of Game Superintendent, D. E. Forsland

In rendering this report of the operations of the Game Branch during the fiscal year ending March 31, 1947, I am pleased to record a steady progress in all branches of operation. The keynote of the Branch in all its operations has been to render public service, and any reasonable suggestions submitted to the officers of the Branch have been carefully analyzed and, if found worth while, acted upon. As a whole, the general outlook for both fur and game throughout the Province is favourable.

It is true that our upland birds are still scarce; however, all the reports received from our game officers and others interested in game preservation tend to indicate that the upland birds, such as Prairie Chicken and Hungarian Partridge, are gradually on the increase, and it is hoped that the Province will see the time when the upland birds will again be plentiful.

During the hunting season of 1946 migratory birds also showed a decline from the number of birds of the preceding two seasons. It is recognized that the bird population in Alberta fluctuates from year to year; the supply of both migratory and upland birds is greatly dependent on many conditions over which the Department has little or no control, such as the cycles of increase and decrease in the species, predators and adverse hatching conditions, etc.

In connection with the fur-bearing animals there has been a great reduction in the taking of the so-called long haired fur, such as Foxes, Coyotes and Timber Wolves, this being due mainly to a slump in the market as regards all this type of fur. All fine furs, such as Muskrat, Beaver and Ermine, Marten and Squirrels, have retained their high market value, and the taking of some of these fur-bearers has shown a decided increase from the fiscal year ending March 31, 1946. The Game Branch is fortunate in having the confidence of the fur trade as a whole. I am safe in saying that all our licensed fur dealers in this Province are doing their very best in living up to the Game Regulations, and from time to time have shown a definite desire and readiness to co-operate with the Game Branch, even to the extent of assisting in the prosecution of some of their own delinquent fur dealers. It is, of course, unavoidable that a certain amount of poaching of furs by unlicensed persons will take place, particularly in connection with Beaver, this fur being at an unusually high price level for the last two seasons. With our present good co-operation with the Alberta fur dealers it has become a very difficult matter for the poachers to dispose of any Beaver taken within the Province and such pelts have to be transported out of the Province by various means before being sold.

Throughout the year we also have received a very wonderful co-operation and assistance from the Royal Canadian Mounted Police. These men do a considerable amount of our enforcement work, and it is always found that the officers of the Game Branch can call on them for assistance and be sure of receiving the best of co-operation.

Undoubtedly, big game is on the increase in this Province. From all reports received, not only from hunters but from our own game officers and forest rangers and other interested parties, it would appear that big game is showing a steady increase over the last few years, and with the exception of Moose it is safe to say that the number of big game animals is several times greater than years ago; particularly is this the case with the Elk population, Elk having increased to the extent that in some parts of the Province they have become somewhat of a problem to the farmer and rancher.

Big game plays a large part in the tourist traffic of this Province, entering as it does into the programme of many visiting tourists. The number of non-resident hunters visiting Alberta is composed to a large extent of enthusiastic big game hunters and fishermen. The tremendous increase in the number of hunters visiting our Province can be seen by the comparison of the big game licenses sold. In the year of 1941 only 77 Non-Resident Big Game Licenses were sold, whereas during the period under review not less than 281 Non-Resident Big Game Licenses were sold. This increase in the sale of non-resident licenses indicates the interest shown by non-resident hunters in the hunting possibilities of the Province, and Alberta is rapidly becoming the outstanding big game area on the North American continent.

The Advisory Council must be mentioned as having rendered very valuable assistance to the Game Branch in their suggestions and recommendations dealing with open seasons and bag limits on game birds and big game, also in keeping the Branch posted on the prevailing game conditions.

In order to give a clearer and more concise picture of the work performed by the Branch and the general conditions of our wild life, I wish to report under the following headings:



Inglewood Bird Sanctuary, Calgary

Migratory Game Birds

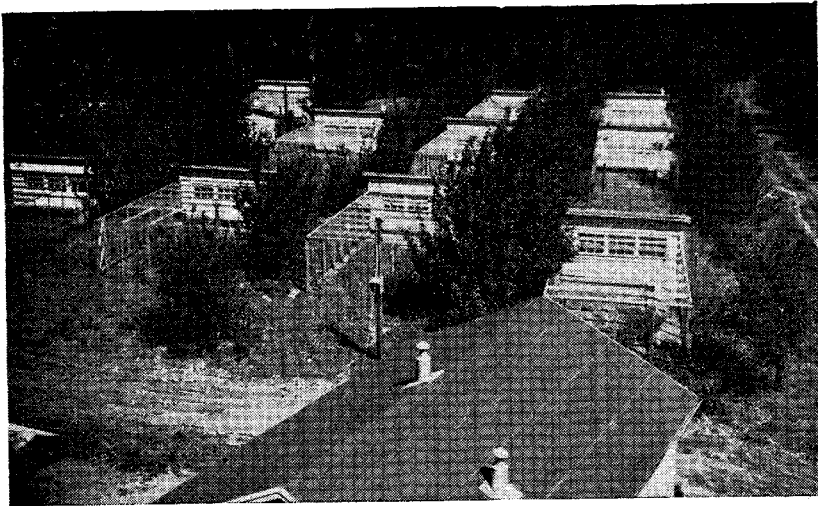
Owing to drought conditions prevailing in the southern portion of Alberta the supply of migratory birds in the southern and central portions of the Province was not very good. Most of the birds raised in the prairie districts have been found to migrate north during the later portion of the summer and fall, prior to the general migration south into the United States and Mexico. This movement of southern raised birds into the central and northern portion of Alberta for a short period has been amply proven by the banding of the birds hatched in the prairie districts. The Province, however, is fortunate in that the northern and central portions are important nesting grounds for migratory birds, and the Ducks and Geese will always be comparatively plentiful in Alberta even though the over-all international picture may be far from encouraging.

Ammunition for the hunting of migratory birds was still in short supply during the fall shooting season of 1946, and this shortage of ammunition would tend to keep bag limits down to a considerable extent.

A large number of complaints were lodged with the Game Branch by farmers in connection with damage caused by Ducks, especially was this the case with the Eastern Irrigation District, where farmers had some considerable trouble with their pea crops being destroyed by Ducks, and a blanket permit was obtained from the Dominion Government, under Section 19(e) of The Migratory Birds Convention Act, authorizing any farmer in the Province to kill migratory birds causing damage to his farm crop, at any time prior to the opening of the regular open season.

Upland Game Birds

The scarcity of all upland birds is reflected in the fact that it was found necessary to declare closed seasons throughout the Province on Prairie Chickens,



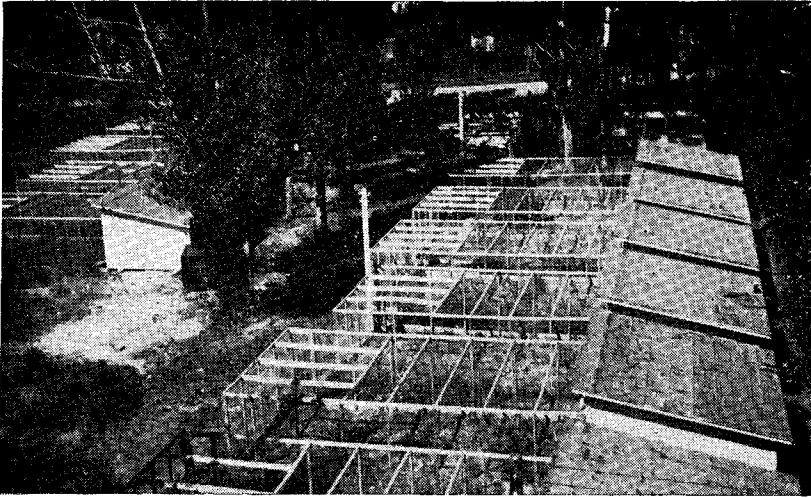
1946 Addition to Pheasant Hatchery at Brooks

Ruffed Grouse, Spruce Partridge and all other upland birds with the exception of Pheasants, on which there was a four-week season in the Eastern Irrigation District, and Hungarian Partridge, on which there was a short open season of two weeks in the southernmost portion of the Province, that is to say, in that part lying to the south of the Bow and South Saskatchewan Rivers. The bag limit was also reduced on Hungarian Partridge owing to the short supply of birds.

As mentioned in my opening remarks, the upland bird population in Alberta fluctuates from year to year, and the upland bird population is very greatly depleted due to conditions over which the Department has little or no control, but every indication is to the effect that upland birds are now on the uptrend of their periodical cycles of decline and increase. A number of reports would indicate that there is a fair supply of such upland birds as Prairie Chicken and Hungarian Partridge in certain localities, but it was considered advisable not to open a season on Prairie Chicken and Hungarian Partridge for at least another year.

The Ring-neck Pheasant is holding his own in spite of the tremendous amount of hunting done for this bird. The reports received from time to time during 1946 indicated a reduction in the number of these birds, and although the open season on Ring-neck Pheasants was originally set by Order-in-Council from October 14th to November 30th in the Eastern Irrigation District, it was found necessary to shorten the Pheasant season by two weeks, and in November, 1946, a new Order-in-Council was passed closing the season throughout the Province on November 16th.

During the period under review the Provincial Pheasant Farm at Brooks distributed 5,542 Pheasants through the local Fish and Game Associations to various suitable districts in the Province, the various districts to which the birds were sent being selected upon the recommendation of the Alberta Fish and Game Association, and many districts that previously had no Pheasants now report a presence of these birds in fair numbers. This is a considerable increase in the number of birds distributed the previous year when only 2,060 birds and approximately 5,000 eggs were distributed.



Original Pheasant Hatchery at Brooks

BIG GAME

With the exception of Moose, big game is undoubtedly increasing from year to year. Many areas in which big game was very scarce now have a very good supply of the various types of big game, particularly is this the case with Deer and Elk. Moose has also migrated further south, and some areas south of Calgary and the Pincher Creek district now report the presence of Moose.

Bighorn Sheep

The Bighorn Sheep are holding their own in this Province, and many parties coming in from their hunting trips have reported large bands of Bighorn, particularly in the area north of Jasper Park. In the southern part of the Province, especially in the district in the Livingstone-Highwood Range of Mountains, there has been a great reduction in Bighorn Sheep during the last season, owing partly to a reported outbreak of infectious lung worm disease contracted by the Bighorn, and at the annual meeting of the Alberta Fish and Game Association a resolution was passed, requesting the Department to close that part of the Province lying to the south of the Bow River to the hunting of Bighorn Sheep. This recommendation was acted upon, and no hunting of Bighorn was allowed south of the Bow River.

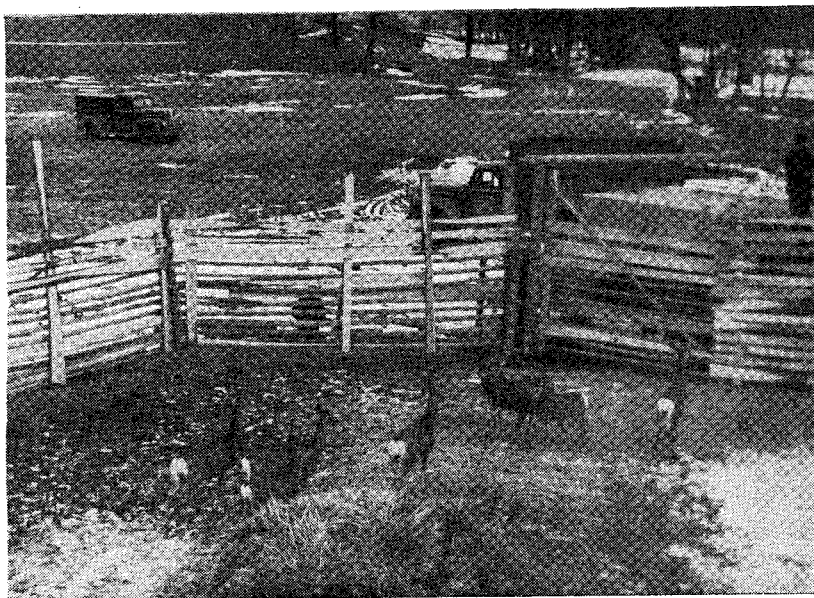
Mountain Goat

Mountain Goat are still plentiful, and several non-resident hunters report the taking of one or more of these animals during their hunting trip. Owing to the inaccessible places frequented by this type of big game animal, there was very little danger of the Mountain Goat ever becoming decimated. Practically no one except a hunter with good equipment and good guides is able to hunt this animal with much success.

Deer

There is definitely an increase in the Deer population throughout the Province, particularly is this the case in the area on the east slope of the mountains in the southern portion of the Province, and Deer is very frequently seen throughout the foothills area, from Calgary south.

A certain amount of difficulty was experienced by the ranchers in the Pincher Creek and Waterton Lakes district during the early spring of 1947. Owing to the severe winter, with a considerable amount of snow, the Deer were driven out from the National Parks and Game Preserves on to farm lands, and in order to protect the ranchers' hay stacks and green feed the Department had to arrange for the moving of not less than 154 Deer from the Twin Butte area to the district west of Olds, where the animals were released. This transportation of 154 Deer was very successfully accomplished, with the loss of only one animal, by members of the Olds Fish and Game Association, with the assistance of local ranchers.



Transporting Deer from Twin Butte to West of Olds

Elk

The Elk situation is very much similar to the Deer situation. Elk has steadily spread southward from the original small herd, located on the old Pembina-Brazeau Elk Preserve. Today Elk is present throughout the foothills area from the Athabasca River south to the international border, and Elk is becoming increasingly more numerous, so much so that the ranchers and farmers in the foothills district are complaining of this big game animal destroying green feed, hay stacks and various cover crops. During the period October 21, 1946, to the end of the fiscal year, 22 Special Permits were issued to various ranchers and farmers of the Pincher Creek, Twin Butte and Waterton Parks district to kill Elk causing damage to hay stacks or other feed within the boundaries of their own land.

The open season on Elk in the Pincher Creek area during the year under review was from November 1st to December 31st, two weeks longer than in any other part of the Province.

Representations have also been made to the Controller of National Parks to institute some kind of controlled reduction of the large Elk herds now pasturing within the limits of the Waterton National Park.

Moose

Notwithstanding the fact that Moose is now found in many areas where they have not been seen in previous years, the over-all picture as far as Moose is concerned is not very encouraging. During the last number of years there appears to have been a gradual decrease in the Moose population, particularly is this the case with the Bull Moose. Reports from returning big game hunters, packers and guides would tend to indicate that there is a shortage of Bull Moose in the area to the north and immediately adjacent to the Jasper National Park. This area is very heavily hunted by American hunters, and for years some of the best trophies have been taken out of this district. For the last two or three years, however, many hunters going into this area complain about seeing numerous dry cows, very few calves and practically no Bull Moose. The consensus of opinion among the better class guides and some of our resident hunters, who hunt in this area, is to the effect that the reason for this reduction of Moose is found in two main factors, one being the persistent and annual hunting of Bull Moose by non-resident hunters for their trophies in this region; the second being the inroad by Timber Wolves into the Moose calf crop. Undoubtedly the Timber Wolves cause considerable damage to the calf crop and combined with the annual taking of numerous Bull Moose by the resident hunters would no doubt account for the depletion of the Moose population in that district.

Very much the same condition exists on the Clearwater Forest Reserve in the area west of Nordegg, this also being an area frequented by non-resident American hunters. True, there is a certain amount of migration of Moose and often a district which has been considered as a good Moose area one year may be practically depleted of Moose the next year, this condition being very apparent in the foothills area from Banff south to the International border. This southern district was never frequented by Moose, but for the last three years Moose are becoming increasingly evident in the foothills area, north of Waterton Lakes Park and in the foothills west of Nanton and Claresholm and in through the Highwood Mountain range.

The Moose tick has undoubtedly caused a tremendous amount of damage to this big game animal, reducing as it does the vitality and resistance of the animal so that it cannot survive a severe winter. There is no doubt but some special regulations will sooner or later have to be enacted to take care of the dwindling Moose population, various remedies having been suggested, one being, of course, the reduction of predators and another suggestion being the opening of a season for the shooting of either Cow Moose or Bull Moose, thus relieving the pressure from hunters on the remaining supply of Bull Moose.

During the period under survey, that part of the Province lying to the south of Number 1 Highway from Calgary to Banff was closed to the hunting of Moose, but this closed area is showing a gradual increase in Moose population, and in all probability Moose from some of the hunted areas have migrated south into this closed district.

Caribou

Reports reaching the Game Branch from game officers, outfitters and guides, as well as hunters, would indicate that Caribou in the area north of Jasper Park have either migrated into British Columbia or from some unknown reason have become severely decimated. Many of the hunters returning from the Athabasca Forest complain about the absence of Caribou, and as the Athabasca Forest has for years been an excellent district for the hunting of Caribou, some enquiries have been made by the Game Branch as to the reason for this lack of Caribou in one hitherto well stocked district. From all the information that can be gathered on the subject I am of the opinion that the Caribou have migrated

temporarily over the line into British Columbia, some hunters who have spent the last hunting season in British Columbia, in that district south-west from Hazelmere, reported seeing literally thousands of Caribou in that area. That the Caribou migrate in large numbers from place to place is a well known fact, and this is undoubtedly the answer to the question as to what became of the Caribou last year. Certainly the Caribou were not killed off by hunters because the Athabasca Forest is not hunted to any extent by our resident hunters—it is hunted for the most part by non-residents—and the number of Caribou taken out of the district each year could not begin to even account for a portion of the annual decrease. I do not think that the Department need feel any alarm about the apparent lack of Caribou reported last hunting season.

Antelope

During the last Antelope survey conducted jointly by the Dominion and Provincial Government in 1945, the Antelope was estimated at approximately 30,000 animals in the area between the Red Deer River and the international border, with heavy concentrations located east of Suffield in the Tilley district and in the Manyberries and Wild Horse areas in the south.

Due to the very unfavourable feeding conditions existing during the winter of 1946-47, when icy crusts of snow covered the grass lands prohibiting the Antelope from grazing, thousands of these animals migrated south into Montana. Large herds of Antelope were found concentrated in pockets on the north side of the railway right-of-way where they were temporarily prevented from going further south by the railroad fences. Undoubtedly, there was a certain loss of Antelope, due partly to starvation and also partly to predation by Coyotes.

A survey conducted in the spring of 1947 would indicate that our Antelope population has shrunk to in the neighborhood of approximately 7,000 animals. Many of the Antelope migrate to Montana during the winter, undoubtedly being unable to return to their pastures in Alberta owing to the extremely high water in the rivers during the spring floods. In view of this great reduction in the Antelope, it will undoubtedly be necessary to give this species added protection by prohibiting the hunting of this animal next year.

Bear

Grizzly Bear can still be taken without a license or permit in the live stock district, south of the Crow's Nest-Medicine Hat Branch of the Canadian Pacific Railway, and during the season under survey it was found necessary to protect Black and Brown Bear within the Rocky Mountains Forest Reserve, lying north of the Crow's Nest-Medicine Hat Branch of the Canadian Pacific Railway. During the last season, however, Black and Brown Bear were still unprotected throughout the Province outside of the Forest Reserve, this regulation being necessary owing to the damage caused by Black and Brown Bear to small live stock, such as pigs, sheep, calves, etc.

Alberta Fur Production

The fur production is one of Alberta's important sources of revenue, not only as a revenue for the Department, but as a very important source of income to the trappers of the Province. Since 1941 the income to the trapper from this source has steadily increased, partly due to the increase in the market prices for fur and also to the increase in the amount of fur produced.

During the season under review, Alberta produced 1,695,936 pelts of various kinds. This is an increase in the production of wild fur from the previous year, when 1,411,571 pelts were produced in Alberta, an increase in production of 284,365 pelts.

The prices of fur in the open market, however, declined very rapidly during the season 1946-47, particularly so on the so-called long haired or coarse fur, such as Foxes, Coyotes, Timber Wolves, Lynx, etc., and in spite of the increased production of pelts the return to the trapper shows a sharp reduction, the total value of pelts taken being \$1,566,308.35 as compared with \$3,002,419.00 a year ago.

Fortunately for the trapper, the increase in the number of pelts taken was mainly in the higher priced furs, such as Beaver, Mink and Squirrel, and this increase in production of higher priced fur would to some degree offset the losses in market prices. During the year there was a very noticeable falling off in the taking of coarse or long haired fur, taking for an example Cross Foxes. During the season 1945-46 the Province produced 2,477 Cross Foxes, whereas during the year under review only 661 were trapped. In the matter of Red Foxes only 1,690 Red Foxes were trapped in Alberta during the period under survey, whereas in the year previous no less than 6,226 Red Foxes were taken. This reduction in the taking of coarse fur was due mainly to the slump in prices, the trapper feeling that it was not worth his while to trap this type of fur, and he therefore concentrated on the higher priced or finer fur. For instance, during the year under review the Province produced 1,339,837 Squirrel as compared with 748,671 the year before. The Province produced 4,348 wild Mink as compared to 2,778 the previous year. The Beaver production also almost doubled, producing as it did 7,457 pelts as compared to 4,753 pelts the year previous.

The tremendous increase in fine furs, on which the market prices were fairly stable would, of course, make it possible for the trapper to derive a fair income from his trapping operations. This increase in the take of wild furs during the year under review is reflected in the fur tax revenue collected by the Province on these various furs, amounting to \$109,370.20 as compared to \$89,769.17 for the season ending March 31, 1946. This is an increase in the amount of \$19,601.03 in the fur tax collected, and as I mentioned above, this reflects the trend of our fur production in this Province.

Registration of Trap-lines

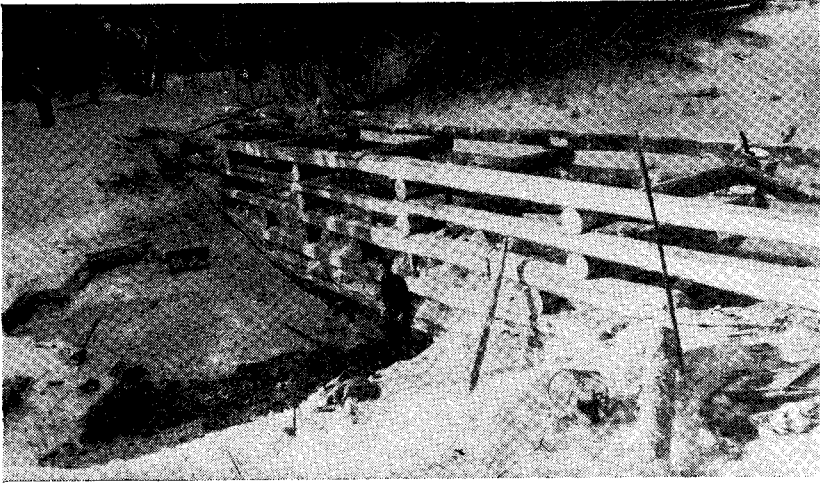
During the season under review, the Department issued a total of 3,023 Certificates for the Registration of Trap-lines and Trapping Areas. This is an increase of 377 Registered Areas over the previous season. The increase in registered trapping areas and trap-lines will of necessity become gradually less as time goes on, as all available open trapping grounds will eventually be covered by registered trap-lines, and it follows that an increase in the registered trap-lines cannot continue indefinitely.

The increased fur production is a very clear indication of the benefits that these registered trap-lines have given to the production of wild fur in Alberta. There is a noticeable increase in the percentage of the total fur production coming from trap-lines, both in quantity and quality.

The trapper of today treats his trap-line as a fur farm and will only take off a crop of fur not exceeding his annual increase of fur raised on his trap-line. This programme of conservation is very apparent throughout the northern portion of the Province where trapping is the only source of livelihood.

Beaver and Muskrat

It is very encouraging to notice the continuous increase of Beaver throughout the Province. During the last number of years the Game Branch has followed a strict rule of conservation of Beaver, and special permits, issued to farmers and others complaining of damage caused by Beaver, have been very carefully investigated and scrutinized before being issued. In many cases where Beaver



Trappers effort to conserve water and raise Muskrats

have been found to cause damage to public or private property, such as roadways, bridge, farm crops or by the cutting of shade trees, the Beaver have been live-trapped by the Department and removed to some suitable districts. Only in very extreme cases were permits issued to allow the owners of land to protect his crop or trees by killing the Beaver.

During the fiscal year under review, 7,457 Beaver pelts were taken by trappers in Alberta as compared with 4,753 the year previous. This is a very gratifying increase of pelts produced, and I have every reason to believe that this Beaver production will continue to show a gradual, steady increase from year to year from now on. Of these 7,457 pelts, not less than 6,673 were produced and taken on registered trap-lines, with 784 pelts taken from Beaver killed by farmers and land owners where it was found that Beaver had to be pelted in order to protect property.

A system of special permits for the taking of Beaver on registered trap-lines is found to be very satisfactory and should be continued in future years.

This same type of special permit is also issued to registered trappers for the taking of Muskrats. The Regulations prevent a registered trapper from taking Muskrats on his trap-line unless he is the holder of a Special Permit, recommended to the Game Branch by the local Game Officer or Forest Ranger. This special permit for the taking of Muskrats has been found necessary in order to segregate the trapper who does not raise any Muskrats within the limits of his trap-line from the registered trapper who does raise Muskrats on his area.

Special permits are also issued to farmers and land owners for the taking of Muskrats in order to protect irrigation projects, stock watering dams and other property. The total number of Muskrats taken during the year under review was 168,232 pelts, of which number 15,063 were pelts taken on special permits issued for the purpose of preventing damage to property.

Fur Farming

On the 1st of April, 1946, the administration in connection with fur farms was transferred from the Department of Lands and Mines to the Department of Agriculture, leaving with the Game Branch the administration of any fur farms taken in connection with the raising of Beaver or Muskrats. Owing to the fact that the breeding stock of these two types of fur farms is mainly

obtained by the collecting of muskrats and Beaver in their wild state, it was felt that this type of fur farming should be left with the Game Branch, for the purpose of better control and supervision of the collection of breeding stock for propagation.

The fur farming of Beaver and Muskrats in this Province is still in its infancy and in the experimental stage, and during the year under review only 17 licensed Beaver farms existed in the Province and only 8 licensed Muskrat farms, making a total of 25 licenses issued for the fur farming of Muskrats and Beaver.

Predator Control

As mentioned earlier in my report in connection with big game, one of the outstanding reasons for the great reduction in the Moose and Caribou population is the inroads caused by Timber Wolves on the calf crop of these two big game animals. Coyotes are also the cause of considerable losses of smaller farm stock, such as Sheep and Pigs as well as Poultry, and both Timber Wolves and Coyotes take a great toll of our fur-bearing animals, particularly Muskrats and Beaver. During the season under review depredations of these two predatory animals have been very severe owing to the absence of Rabbits. For the last three years there have been practically no Rabbits, and as the Rabbit crop constitutes the chief food supply for these predators then, of necessity, they become very bold and aggressive and have gradually closed in on settlements where the conditions made it easier for them to obtain food. The scarcity of Rabbits has also caused the Timber Wolves to make a heavier inroad on big game.

Black and Brown Bear, although classed as predators, undoubtedly cause some damage to our big game, but the damage caused by Bear cannot be compared with the destruction of game by the Timber Wolf.

The Department has cast about in various ways for some means of controlling or reducing this menace to our big game and fur-bearers, but the problem is a very difficult one, partly because Timber Wolves and Coyotes are very difficult to trap, also partly because the pelts of both Timber Wolves and Coyotes demand very little or no price on today's fur market. With the present prices on Timber Wolf and Coyote pelts, the trapper does not feel inclined to put forth any special effort to trap Timber Wolves and Coyotes, and it has been found necessary for the Department to institute a bounty on Timber Wolves and Coyotes in order to induce the trappers to take these predators.

During the fiscal year the Province paid a bounty, in the amount of \$25.00 per pelt, on 512 Timber Wolves, total \$12,800.00, and a bounty of \$3.00 per pelt on 4,934 Coyotes to the amount of \$14,802.00. A bounty was also paid on 22 Cougars at \$15.00 per pelt, amounting to \$330.00, making a total bounty payment during the fiscal year of \$27,932.00. This bounty, however, was only paid during the summer months when the prices on the pelts of these animals were valueless and the bounty was discontinued on the 15th of October, as it was felt that from then on during the winter months the trapper should be able to obtain a sufficient price for the pelts to make it worth his while to trap these animals.

Game Preserves and Bird Sanctuaries

There has been no change in the number of Game Preserves or Bird Sanctuaries, and no new Sanctuaries or Preserves have been set aside during the fiscal year under review.

Enforcement

During the fiscal year under review, the Game Branch obtained 196 convictions for various infractions of The Game Act and the Game Regulations. This

is a slight reduction in convictions from the previous year, when 209 convictions were obtained for infractions of The Game Act.

It can be seen that infractions of the various sections of The Game Act and the Game Regulations remain fairly constant. There is a certain element that will always take a chance, either in shooting without a license or hunting before the opening of the season. Most of the convictions obtained were for infractions of this kind. Next in number were infractions against the Regulations dealing with the trapping of Muskrats. Owing to the high prevailing prices for Muskrat pelts, quite a number of people attempted to trap Muskrats in closed areas or during the closed season.

During this same period the Game Branch confiscated various kinds of fur, mostly Beaver and Muskrat, to a value of \$7,012.88, this fur being sold by public auction and the proceeds becoming part of the general revenue of the Province. Besides the confiscation of furs, there was also a considerable number of rifles, shotguns and ammunition confiscated to the Crown in the right of the Province. All such confiscations are automatically turned over to the Attorney General's Department for disposal.

The making of Game Acts and Regulations is of no avail if the people in the Province will not realize that the wild life in the Province is their own property and that the game and fur is a natural resource to be husbanded. Game and fur is held in custody by the Department for the use of the people of this Province, and the enforcement officers are doing their very best in administering this natural resource so that it will not be exhausted. It is impossible, of course, for the Game Branch with its limited number of enforcement officers to prosecute all offenders; assistance must be given these Game Officers by the general public, by the various Fish and Game Leagues and by the various Trappers' Associations. One of the most persistent menaces to the interest of the sportsman is the fellow who has no regard for game laws, who will fish and hunt and trap out of season, and who take more than his license entitles him to take. In addition to this, we have the man who wantonly kills and wastes big game meat—this man is a potential menace to our future supply of game. There is entirely too much killing of big game for the trophies or for only some choice cuts of meat.

It is encouraging to note that the Game Branch is getting more and more support from the public in its work of conservation, particularly from the various Trappers' Associations which have been formed throughout the Province this last two years. These Trappers' Associations are formulating their own by-laws with a view of preventing any of their members from becoming habitual breakers of the Game laws. It is also encouraging to note that the disposal of illegally taken fur is becoming increasingly difficult as time goes on, owing to the keeping of more accurate records by our fur dealers, the use of a system of seals for legalizing the possession of Beaver pelts and various other restrictive measures.

SUMMARY

Concluding this report, may I say that in spite of the decline in the prices for furs taken in this Province during the season of 1946-1947, the fiscal year under review must be considered a successful year and a year showing continuous progress. More co-operation has been received from all the various organizations interested in the conservation of game and fur, and the sale of all licenses has shown a tremendous increase, and the issuance of registered trap-lines has now reached a state of development which will assure our northern trappers reasonable security and a comfortable annual return for their labour. The game and fur of this Province has become a very valuable natural resource, thousands of people in our northern districts depending on the fur and game for their livelihood.

Fur and game have also become a very valuable source of revenue to the Province, the total revenue to the Province during the year under review amounting to the sum of \$318,910.58, which amount will show the importance of this natural resource to the people of the Province.

GAME LICENSES—PERIOD APRIL 1st, 1946, TO MARCH 31st, 1947

	Number of Licenses	Fee	Total Amount
Resident's Bird Game	19,313	\$ 2.50	\$ 48,282.50
Non-Resident's Bird (Canadian)	282	5.00	1,410.00
Non-Resident's Bird (Non-Canadian)	253	25.00	6,325.00
Resident's Big Game	10,887	5.00	54,385.00
Resident Trapper's	5,376	2.00	10,752.00
Guest Game Bird (Canadian)	4	2.00	8.00
Guest Game Bird (Non-Canadian)	73	5.00	365.00
Non-Resident's General Game	281	50.00	14,050.00
Permit to Collect	4	Various	355.00
Taxidermist's	4	10.00	40.00
Resident's Special	85	5.00	425.00
Non-Resident's Special	182	25.00	4,550.00
Guide's	176	2.50	440.00
Game Farms	1	5.00	5.00
Outfitters	43	Various	1,886.00
Resident's Special Antelope	973	5.00	4,865.00
Non-Resident's Special Antelope	76	15.00	1,140.00
Non-Resident's Permit to Export	212	Various	12,909.00
Fur Farmer's	19	Various	192.00
Beaver Permits	113	1.00	113.00
			<u>\$162,497.50</u>

BOUNTY ON TIMBER WOLVES, COYOTES AND COUGARS—SEASON 1946-47

512 Timber Wolves at \$25.00	\$12,800.00
22 Cougars at \$15.00	330.00
4,934 Coyotes at \$3.00	14,802.00
	<u>\$27,932.00</u>

LICENSED ALBERTA FUR FARMS, 1946-47

Beaver	17	Muskrat	8
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CONVICTIONS UNDER THE GAME ACT, 1946-47

Number of convictions	196
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CONFISCATED FURS

Amount realized from the sale of confiscated fur during the period April 1st, 1946, to March 31st, 1947	\$7,012.88
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TRAP-LINE REGISTRATIONS

Number of Registered Trap-lines and Revenue, April 1st, 1946, to March 31st, 1947	3,023	\$30,230.00
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FUR DEALERS' LICENSES, ETC.

Resident Fur Dealer's Licenses to carry on business in a city, and elsewhere than in a city	421	\$ 4,225.00
Non-Resident Fur Dealer's Licenses to carry on business in the Province	7	700.00
Resident Travelling Fur Purchasing Agents' Licenses	30	750.00
Tanners' Licenses	1	10.00
Furriers' Licenses	14	140.00

FUR TAX REVENUE

Amount collected	\$109,370.20
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MUSKRAT AND BEAVER PERMITS ISSUED

Muskrat Permits issued	309	Beaver Permits	162
Muskrat reported taken	15,063	Beaver reported taken	784

ALBERTA FUR PRODUCTION—SEASON 1946-47

	Total Number of Pelts	Average Value of Pelts	Total Value of Pelts
Badger	812	\$ 2.00	\$ 1,624.00
Bear	112	3.50	392.00
Beaver	7,457	26.00	193,882.00
Ermine	132,158	1.65	218,060.70
Silver Fox	161	13.00	2,093.00
Cross Fox	661	8.00	5,288.00
Blue Fox	1	8.00	8.00
Red Fox	1,690	3.50	5,915.00
White Fox	17	14.00	238.00
Lynx	274	20.00	5,480.00
Marten	778	30.00	23,340.00
Mink	4,348	22.00	95,656.00
Muskrat	168,232	1.70	285,994.40
Otter	75	23.00	1,725.00
Rabbit (Jack)	26,513	.60	15,907.80
Skunk	3,387	.85	2,878.95
Squirrel	1,339,837	.50	669,918.50
Coyotes	9,245	4.00	36,980.00
Timber Wolf	166	4.50	747.00
Wolverine	12	15.00	180.00
	1,695,936		\$1,566,308.35

FISHERIES

Superintendent of Fisheries, H. B. Watkins

A review of the fiscal year ending March 31st, 1947, discloses a progressive and active condition in both the commercial and angling fields of operation. The commercial catch of fish during the period under review shows a total catch of 11,072,598 pounds, an increase of 2,488,593 pounds over the previous year. Market prices were lower during the summer and fall on most varieties, and this trend continued throughout the winter, whitefish being mainly affected. The winter export market for fresh fish caused some anxiety due to heavy production at certain times, but dealers were able to find outlets without reduction of prices to fishermen.

Local demands for fresh and frozen fish were good, with prices in line with the export market. Production of frozen fish for the local market were readily taken up and buyers reported no carry-over. Alberta's trade is mainly with the fresh fish markets and the frozen fish production is relatively small, being confined to lakes where distance and costs makes frozen production necessary. Alberta, therefore, was fortunate in not being faced with the problem at present confronting Manitoba and Saskatchewan, where large stocks of frozen whitefish are being carried over on a dormant market.

Commencing with the winter season, the provisions of The Fish Dealers Act became operative, under which all persons dealing in or with fish were licensed and regulations designed for the protection of the industry and the export trade. The revenue derived by the sale of licenses issued under The Fish Dealers Act amounted to \$2,310.00.

Over a period of years the question has arisen from time to time regarding the expediency of levying a royalty on commercial fish in line with royalties on other natural resources of the Province which are commercialized. Market values as well as pertinent factors respecting commercial production were studied in an effort to bring about an equitable basis on which royalties might be levied. In November, 1946, regulations as to royalties on fish were issued pursuant to The Alberta Fishery Act, and the necessary procedure adopted for the payment and collection of royalties commencing with the winter season of 1946-47. The system of collection and the co-operation of the fish dealers has been most satisfactory, and the royalty collections have caused but little inconvenience to the trade. The sum collected on fish royalties for the season amounted to \$20,139.10.

It is worthy of note that the operation of the Whitefish Inspection Regulations has brought about increasing confidence on the part of the United States

Food and Drug Administration in the quality of whitefish exported from Alberta. A very determined effort has been made to put Alberta whitefish in a favourable position, and the policy of permitting whitefish production only from lakes of acceptable quality or from lakes where the fish can be properly processed is reflected by the demand for Alberta whitefish on the export trade. From time to time lakes are surveyed to ensure quality production, and any change in the incidence of infestation is carefully noted and the necessary action taken to meet the changed condition.

It is again necessary to caution fur farmers in regard to the supply of fish available for animal food. It must be realized that the large quantity of fish required as food for the increased number of ranch raised mink is causing a heavy drain upon our lakes. It is, therefore, becoming increasingly necessary for fur farmers to augment their food supply from other sources. The difficulties of keeping stocks of feed on hand and obtaining sufficient quantities from sources other than lake supply is acknowledged. Regrettable as it was, many fur farmers were faced with feed shortages at the critical period prior to pelting time. However, in order to protect the fur farmers' investment and livelihood, a number of lakes were called upon to fill the feed requirements, and conservation of the fish population in these lakes to a large degree had to be sacrificed.

Domestic fishing licenses issued during the year numbered 87, a decrease of 382 from the previous year. The use of domestic fishing licenses has been closely watched for a number of years to ascertain whether this form of license was serving the need for which it was originally intended, i.e., to afford a supply of food to persons living in sparsely settled areas distant from market centres. The need for domestic fishing in the well settled area of the Province is obviously unwarranted and, in order to confine this form of license to its proper use, all lakes south of Township 62 were closed to domestic fishing in May, 1947.

Angling throughout the Province shows a steady improvement over previous years; stream conditions were fairly good with no serious flood damage. Water levels of lakes were considerably lower and some losses of fish occurred through winter stagnation. Winter loss of fish through stagnation may be expected in small shallow lakes, but an unusual condition at Lac La Biche took a heavy toll of young whitefish, tullibee and perch before the spring break-up due to dissolved oxygen deficiency of the water.

Two important biological surveys were undertaken during the year under the direction of Dr. R. B. Miller, Zoology Department, University of Alberta. These reports are too lengthy to be included in this review, and the following is a short summary of the observations and findings:

Cold Lake.—In contrast to most prairie lakes, Cold Lake is very deep; of the total water area of 134.5 square miles, more than one-half is over 150 feet deep, and more than one-quarter is over 250 feet deep; less than one square mile is over 350 feet; 369 feet was the deepest sounding made. The shore and bottom are sandy over most parts. Oxygen content is high all summer; the lake is cold and does not stratify thermally to any marked extent. Surface waters do not exceed 60°F. by very much at any time. The bottom fauna is not rich either in kinds or quantities of animals. This is probably due to the steep slope and the predominantly sand bottom. Shrimps of the genus *Protoporeia* are the principal bottom animals.

The following thirteen kinds of fish were found by netting and seining: whitefish, tullibee, lake trout, pike, pickerel, perch, ling, northern sucker, common sucker, ninespined stickleback, sculpin, spot-tailed minnow and lake chub. Whitefish grow rather slowly due to the inadequate bottom food. Statistics indicate that larger and younger fish are being caught now than four or five years ago. The lake trout make good growth, but are disappearing. Unless net fishing ceases they will probably almost vanish. Cold lake is a natural trout lake, and

would support a good sport fishery if net fishing were abolished. The large population of small tullibee affords an ideal food for the lake trout.

It seems likely that the revenue from a good sporting lake would be as great, perhaps greater, than that from a whitefish fishery, particularly a rather poor whitefish fishery. Cold Lake for its area has a low whitefish yield.

Elbow River.—The Elbow River is fairly typical of many of our eastern slope trout streams. It rises in the mountains and runs approximately 65 miles to enter the Bow River at Calgary. The source is at an elevation of 7,000 feet, and the total descent is about 3,500 feet. The gradient is, of course, steepest near its source; in the first 20 miles the drop is 100 feet per mile. The Elbow River and its tributaries above Elbow Falls have a very low trout carrying capacity. Rainbow trout will do well only where extensive pool areas of relatively quiet water alternate with riffles. Such areas are lacking in the upper Elbow. Furthermore, the absence of vegetation along the shore cuts down on the number of insects which fall into the stream—an important source of food for rainbow trout. This, combined with the poor food on the stream bottom and the absence of algae, makes planting of rainbow trout a futile undertaking. The section of the river from Elbow Falls to Twin Bridges due to poor food and cover is not suitable for rainbow trout. No species of trout can be expected to thrive here unless some stream improvement devices can be made to operate successfully. The portion of the river from Twin Bridges to Weasel Head Bridge is most promising. The river is deeper here and the current less swift; the channel less variable and braided. There are a number of fine deep pools providing good cover with a fair supply of bottom food—richest section of the river. The lower section of the river from the Bow River is cut off from the rest by the Glenmore dam. Its fishes are migrants from the Bow River. There are numerous good pools and some bank cover; the value of these is reduced considerably by the violent fluctuations in level caused by variations in the amount of water released at the dam. Because of these fluctuations the food supply is poor and the fish carrying capacity variable and inestimable because of the fluctuating water level.

In most places the Elbow River is over 30 feet wide, very shallow and very much braided; there is a general lack of deep quiet stretches, and the wide valley is devoid of vegetation near the river margin. In narrower places boulders may be heard bouncing along the bottom, and in the spring severe scouring of this sort must take place. To provide good fishing in most of the Elbow River it is necessary to find a successful stream improvement device, cheap enough to be installed every mile or so along the most frequently visited stretches of the river. The device must be strong enough to stand the spring floods and designed so that it forces the current to dig holes. The Elbow River with its tributaries is a very poor trout stream. The poor food supply, almost lack of pools and cover, swift current and variable channel, all militate against trout survival.

Dealers in eyed trout eggs have been in short supply during the past few years, and this season offerings were very limited with prices two to three hundred percent above normal. It is apparent that the Province will have to depend upon its own resources to supply hatchery requirements if the present trend of restricted supply and high prices continue. Fortunately, local spawning operations by fishery officers have produced sufficient loch leven trout eggs and approximately fifty percent rainbow trout and speckled trout eggs. Sources of supply of cutthroat trout eggs are not yet assured.

Five natural spring-water ponds located on the Hunter Brothers Ranch, near Metaskoe, were chosen for trout brood stock ponds. The ponds were known to contain pike and common suckers and, therefore, it was decided to destroy as many as possible of these fish before introducing the brood stock. Powdered derris of five percent rotenone content was introduced in quantity to produce a concentration of approximately 1 p.p.m. derris. In fish the toxic effect of

rotenone is exerted chiefly upon the respiratory system, a breaking-down of the gill epithelium obviously destroys its respiratory function.

The derris was distributed by tying the dry powder in four or five pound lots in burlap. The burlap bags were then trailed through the water; each margin of a pond was treated by wading and dragging the bag of derris. The centre of each pond was treated by dragging the bags of derris behind a boat.

Pike began to die in the ponds within an hour after treatment. All pike in the ponds were dead in twenty-four hours. A few common suckers were still alive after forty-eight hours. After treating the ponds, a dam was constructed in the creek below the ponds to prevent pike from re-entering the ponds. In the fall 2,800 yearling rainbow trout were introduced in the ponds.

REVENUE:		FISHERIES	
		1945-46	1946-47
Fishing Licenses		\$26,138.00	\$24,571.00
Fish Dealer's Licenses			2,310.00
Boat Licenses		45.00	110.00
Angling Permits		13,511.85	20,753.19
Royalties			20,139.10
Casual		1,623.83	878.43
		<u>\$41,318.68</u>	<u>\$68,761.72</u>

Increase—\$27,443.04.

Licenses and Permits	12,288	14,625
Prosecutions	42	123
Confiscations	52	115
Commercial Fish Catch (lbs.)	8,584,005	11,072,598

PROSECUTIONS:		1945-46	1946-47
Fishing without license		10	35
Excess of per diem limit .....		...	2
Fishing out of season		4	21
Using illegal gear		1	4
Pollution		3	3
Taking illegal sized fish		1	...
Illegal possession of fish		9	8
Illegal sale of fish		1	5
Using gill nets in stream		1	...
Operating illegal nets		9	26
Operating nets without markings .....		...	10
Operating nets other than licensee		3	2
Operating nets in closed area .....		...	4
Obstructing a Fishery Officer in line of duty .....		...	3
		<u>42</u>	<u>123</u>

COMMERCIAL PRODUCTION OF FISH

Species	1942-43	1943-44	1944-45	1945-46	1946-47
	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.
Whitefish	1,916,496	2,374,532	2,655,016	3,253,621	2,649,881
Trout	18,556	21,716	21,492	79,860	111,878
Pike	504,674	585,519	430,150	657,837	585,146
Pickrel	254,337	840,164	994,659	486,083	612,466
Perch	75,816	128,628	152,643	205,047	244,957
Tullibee	3,324,864	3,596,665	3,319,306	3,374,524	6,688,432
Mixed Fish	64,140	210,297	152,105	167,033	179,838
Totals	<u>6,158,883</u>	<u>7,757,521</u>	<u>7,725,371</u>	<u>8,584,005</u>	<u>11,072,598</u>

	Weight (lbs.)	Value to Fishermen	Value as Marketed
Totals for year 1942-1943	6,158,883	\$ 283,622.41	\$ 606,970.32
Totals for year 1943-1944	7,757,521	481,498.25	973,777.86
Totals for year 1944-1945	7,725,371	418,653.49	863,138.28
Totals for year 1945-1946	8,584,005	742,098.48	1,451,717.14
Totals for year 1946-1947	11,072,598	600,292.43	1,340,539.95

LICENSES AND PERMITS

	1942-43	1943-44	1944-45	1945-46	1946-47
Angling Permits (Seasonal)	5,537	5,920	6,296	6,503	9,038
Angling Permits (Limited)	327	460	355	427	629
Domestic Licenses	317	522	417	479	87
Fisherman's Licenses	1,571	2,868	3,323	4,700	4,643
Commercial Licenses	77	124	142	173	130
Motor Boat Licenses	3	3	4	6	17
Totals	<u>7,832</u>	<u>9,898</u>	<u>10,539</u>	<u>12,288</u>	<u>14,625</u>

DEPARTMENT OF LANDS AND MINES

QUANTITIES AND VALUE OF FISH CAUGHT AND MARKETED

Species	Period	Weight (lbs.)	Value to Fisherman	Value as Marketed
Whitefish	May 16/46 to Sept. 30/46	652,875	\$ 80,735.01	\$ 159,954.38
	Dec. 1/46 to Dec. 31/46	285,911	21,987.26	55,752.00
	Jan. 1/47 to Mar. 31/47	1,711,095	235,015.00	592,039.00
			\$ 335,737.27	\$ 807,745.38
Trout (Lake)	May 16/46 to Sept. 30/46	37,852	\$ 3,377.88	\$ 8,327.00
	Dec. 1/46 to Dec. 31/46	74,026	14,245.00	31,091.00
	Jan. 1/47 to Mar. 31/47	111,878		18,322.88
Pickeral	May 16/46 to Sept. 30/46	418,117	\$ 35,226.33	\$ 82,369.05
	Dec. 1/46 to Dec. 31/46	96,594	2,876.01	18,855.00
	Jan. 1/47 to Mar. 31/47	97,755	17,085.00	35,094.00
Pike	May 16/46 to Sept. 30/46	269,525	\$ 6,281.98	\$ 16,980.08
	Dec. 1/46 to Dec. 31/46	70,518	2,507.30	4,231.00
	Jan. 1/47 to Mar. 31/47	245,103	11,001.50	29,412.00
Tullibee	May 16/46 to Sept. 30/46	4,482,648	\$ 93,442.53	\$ 170,340.62
	Dec. 1/46 to Dec. 31/46	1,334,283	33,086.96	56,030.00
	Jan. 1/47 to Mar. 31/47	871,501	25,265.00	34,860.00
Perch	May 16/46 to Sept. 30/46	167,516	\$ 10,595.26	\$ 22,782.17
	Dec. 1/46 to Dec. 31/46	8,746	629.82	1,224.00
	Jan. 1/47 to Mar. 31/47	68,695	6,386.00	18,479.00
Mixed Fish (Ling. Suckers)	May 16/46 to Sept. 30/46	134,656	\$ 920.74	\$ 1,568.15
	Dec. 1/46 to Dec. 31/46	22,355	333.35	667.00
	Jan. 1/47 to Mar. 31/47	22,827	294.50	495.50
		179,838	1,548.59	
		11,072,598	\$ 600,292.43	\$1,340,539.95

LAKES—COMMERCIAL CATCH

Lake	Ling	Tullibee	Suckers	Perch	Pickrel	Pike	Trout	Whitefish	Total
Amisk	180	15,550	470	2,185	1,330	5,545	.....	.....	25,260
Baptiste	29,550	610	430	2,375	7,305	.....	.....	40,270
Beaver	177	37,045	20,483	9,652	.....	35,291	102,646
Bischo	408	.....	.....	11,528	11,736
Blackett	1,985	.....	.....	1,985
Bobtail	2	4,991	.....	17,044	22,037
Buck (65-17-4)	400	4,900	.....	5,748	60	9,657	.....	37,868	58,633
Buck (46-5-5)	32	74	.....	52,039	52,145
Burnt	3,306	5,139
Calling	5,030	203,000	100,600	16,725	47,040	11,580	.....	14,800	398,775
Chip	19,806	.....	.....	19,806
Christina	3,000	17,745	2,000	.....	900	13,740	.....	15,400	47,785
Cold	639	10,245	21,268	134,857	172,009
Elmor	429	1,431	402	.....	3,271	5,533
Fawcett	250	1,170	1,400	1,360	2,090	440	.....	7,960	14,670
Fickle	2,733	2,733
Fork	587	.....	411	.....	.....	998
Frenchman	1,015	.....	980	.....	.....	1,995
Georges (Cheecham)	2,445	18,675	.....	1,800	18,675
Gregoire	2,788	.....	271	17,832	3,332	.....	.....	7,377
Heart	150	5,534	.....	28,518	54,943
Helena	6,600	.....	.....	1,275	100	.....	.....	250
Hilda	320	.....	60	1,009	655	.....	.....	7,875
Hope	17	.....	2,044	2,044
Isiak	372	12	.....	90,641	90,658
Ironwood (Rocky Island)	2,997	1,324	.....	3,642	4,026
Island (87-3-5)	1,228	.....	346	1,160	542	.....	16,987	21,318
Jackson	537	.....	76	1,420	1,000	.....	.....	3,276
Johnson	3,033	3,033
Jumbo	1,229	.....	256	961	542	.....	3,000	3,000
Kinnaird	2,669,601	298	116,508	129,032	100,814	.....	.....	2,988
Lac La Biche	1,544	.....	.....	374	285	.....	537	3,016,790
Lac La Nonne	32	205	17,478	367	.....	9,468	11,671
Lac Ste. Anne	8,300	175	.....	4,700	.....	88,951	107,053
Lawrence	12,780	10,484	157,669	99,191	.....	13,175	13,175
Lesser Slave	30,509	3,556,587	.....	200	.....	.....	.....	262,777	4,129,997
Little Egg	200
Little Whitefish No. 1	967	.....	.....	.....	1,177	.....	40,262	42,406
Long Lake (63-19-4)	1,740	.....	4,540	1,320	7,265	.....	15,265	15,265
Lower Mann	18,529	.....	5,428	.....	23,687	23,687
Upper Mann	29,000	.....	29,000	29,000
May	6,650	.....	150	1,523	1,205	.....	1,114	10,642
Meyer	6,450	.....	.....	6,450
Missawabi	528	.....	7,155	.....	.....	7,683
Moose	39,381	.....	18,539	12,607	17,269	.....	32,422	120,218
Mosquito	2,993	47,641	39,326	.....	21,003	110,963
Muriel	143,100	143,100
McGregor	1,037	.....	128,920	128,957
Nanur	161	61,524	43,517	105,202
Newell	252	.....	.....	30,144	.....	231,388	261,784

LAKES—COMMERCIAL CATCH—Continued

Lake	Ling	Tullibee	Suckers	Perch	Pickeral	Pike	Trout	Whitefish	Total
Orloff	130	.....	.....	370	500	.....	915	1,915
Parless	120	.....	29,086	118,461	147,667
Pigeon	6,100	.....	100	.....	4,340	8,000	.....	160,000	178,540
Pinehurst	95	7,628	1,744	.....	14,824	24,291
Primrose	150	500	3,000	.....	72,017	1,176	.....	14,839	91,532
Rock Island	455	300	.....	900	750	.....	5,655	8,210
Royanna	1,200	1,200
Sandy	500	10,700	.....	50	468	250	.....	5,000	16,968
Shebert	1,825	3,980	.....	2,050	7,255
Skeldon	41,200	.....	1,930	1,260	2,940	.....	20	46,950
Supe	1,867	.....	31,139	.....	.....	33,006
Sturgeon	727	214	5	.....	24,276	24,495
Touchwood	300	3,846	.....	.....	4,873
Trout (Graham)	52,651	.....	.....	1,496	157	.....	22,366	24,019
Urukuma and Urukumasis	844	798	4,037	.....	113,069	170,555
Wabamun	312	20,293	5,121	.....	532,779	533,623
Whitefish	396	.....	.....	16,902	35,401	.....	62,096	88,218
Winnifred	9,480	7,570	.....	77,707	130,010
Wolf	21,500	1,000	.....	.....	.....	.....	10,680	50,230
Totals	46,519	6,690,432	131,319	244,957	612,466	585,146	111,878	2,649,881	11,072,598

NUMBER AND VALUE OF VESSELS, BOATS, FISHING GEAR AND EQUIPMENT

	1942-43		1943-1944		1944-1945		1945-1946		1946-47	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
Vessels, Boats:										
Row	133	\$ 4,290.00	186	\$ 3,420.00	146	\$ 3,340.00	132	\$ 6,134.00	359	\$ 9,160.00
Gasoline	107	31,545.00	208	86,380.00	181	55,850.00	222	83,380.00	292	106,800.00
Diesel	1	.....	1	5,900.00	1	5,900.00	1	5,900.00	.....	.....
Barges	.....	.....	3	16,000.00	3	16,000.00	3	16,000.00	.....	.....
	240	\$ 35,835.00	398	\$111,700.00	327	\$ 81,090.00	358	\$111,814.00	651	\$115,960.00
Piers and Wharves:										
Summer	.....	.....	9	\$ 4,474.00	29	\$ 5,040.00	31	\$ 7,000.00	37	\$ 8,370.00
Winter	.....	.....	6	2,300.00	6	2,300.00	20	8,600.00	93	11,230.00
Fish Plants and Ice Houses:										
Summer	.....	.....	23	\$ 16,847.00	127	42,245.00	63	34,750.00	180	44,920.00
Winter	.....	.....	10	3,350.00	41	31,400.00	41	74,600.00	75	39,670.00
	.....	.....	.....	1944-45	.....	.....	1945-46	.....	1946-47	.....
Gill-Nets:										
May 16-Sept. 30	1,755	\$ 35,100.00	4,697	\$ 93,940.00	3,803	\$ 65,360.00	5,716	\$ 95,529.00	6,387	\$102,404.00
Dec. 1-Dec. 31	2,193	43,860.00	3,665	64,970.00	2,738	37,928.00	3,700	49,238.00	6,304	66,856.00
Jan. 1-Mar. 31	4,937	98,740.00	8,806	157,532.00	7,043	92,888.00	12,949	194,817.00	10,140	165,304.00

DISTRIBUTION, 1946

RAINBOW TROUT

	Yearlings		Yearlings
Old Man River:		Sibbald Creek	10,000
Mill Creek	1,500	Jumping Pound Creek	15,000
Beaver Mines Creek	1,000	South Sheep River	10,000
Castle River	10,000	North Sheep River	1,200
Livingstone River	8,000	Dyson Creek	10,000
Pincher Creek	8,000	Spring Creek	500
Ernst Creek	1,000	Coal Creek	1,200
Racehorse Creek	3,000	Flat Creek	10,000
Old Man River	3,000	Sullivan Creek	15,000
Todd Creek	1,500	Highwood River	9,500
Allison Creek	1,000	Waterton River:	
Honey Coulee	15,000	Yarrow Dams	1,000
Lyndon Creek	14,800	Drywood River	1,000
Trout Creek	3,000	Waterton River	3,000
	<u>70,800</u>	Lees Creek	1,200
Bow River:			<u>6,200</u>
Exshaw Lagoons	5,000	Burmis Lake	500
Bragg Creek	10,000	Beauvois Lake	6,350
Elbow River	18,000	Gap Lake	10,000
Prairie Creek	5,000		<u>16,850</u>
McLean Creek	2,600		
Pirmez Creek	2,600		
Ranger Creek	600		

CUTTHROAT TRONT

	Yearlings		Yearlings
Bow River:		Fish Creek	3,000
Sullivan Creek	15,000	Coal Creek	3,000
Fir Creek	10,000		<u>74,750</u>
Fir Creek Forks	5,000	Obed Lake	3,000
Junction Creek	10,000		
Little Jumping Pound Creek	5,000		
Jumping Pound Creek	4,000		
South Sheep River	19,750		

LOCH LEVEN AND EASTERN BROOK TROUT

	Yearlings		Yearlings
Red Deer River:		North Saskatchewan River:	
Grant Creek	5,000	Muskeg Creek	10,000
Dennison Creek	5,000	Prairie Creek	20,000
Spring Creek	20,000	Wolf Creek	6,000
Fallentimber Creek	15,000	Horseshoe Creek	1,900
South Raven River	15,000	Alford Creek	15,000
James River	10,000		<u>47,900</u>
Bearberry Creek	10,000	Athabasca River:	
Red Deer River	10,000	Sundance Creek	7,500
North Raven River	20,000	Trout Creek	7,000
Waning Creek	5,000		<u>14,500</u>
	<u>115,000</u>		

PERCH—YEARLINGS AND OLDER

Whitewood Lake	8,000
Nakamun Lake	11,000
Hastings Lake	14,900
Cottage Lake	10,000
Medicine Lake	30,000
Fish Lake	18,800
	<u>92,700</u>
Total Distribution	<u>567,900</u>

Mining Lands Administration

REPORT OF THE SUPERINTENDENT OF MINING LANDS, H. H. SOMERVILLE

A marked increase was shown in the output of coal during the calendar year of 1946, when the production of the Province exceeded that of any previous year by more than one million tons. The production of oil was 916,908 barrels lower than in 1945, the decrease being caused by the decline in production of the Turner Valley field.

The production and value of Alberta's chief minerals for 1946 were as follows: coal, 8,824,455 tons, valued at \$33,197,261; petroleum, 7,138,532 barrels, valued at \$14,348,069; natural gas, 35,973,473 Mcf., valued at *\$1,798,674; and salt, 31,683 tons, valued at \$316,830.

Mineral rights, solid, liquid and gaseous, the property of the Crown in the right of the Province, are not sold, but are disposed of by lease, reservation, permit or grant for limited periods of time. The Division is responsible for the administration of regulations governing these rights on both Provincial and school lands. Revenue is obtained from fees, rentals, bonuses and royalties, and during the fiscal year a total of \$1,363,157.12 was received.

Activity continued under the regulations governing the reservation of petroleum and natural gas rights for geological and/or geophysical examination, including any investigation relating to sub-surface geology, and during this fiscal year more than seven million acres were granted under prospecting reservation. Before commencing or undertaking any geophysical operations, or the examination of the sub-surface geology in the Province, a license must be procured from this Division at a fee of \$25.00, and during the fiscal year 23 licenses were issued.

The search for new oil and gas fields continued, and 176,149 feet of hole were drilled in wildcat areas during 1946, which was less than in 1945 when 245,962 feet were drilled in unproven areas. In addition to this exploratory drilling, 225,771 feet of hole were drilled in 1946 in known oil and gas fields, making a total footage of 401,920. A new depth record was set by the well drilled jointly by Imperial Oil Limited and Shell Oil Company of Canada Limited at Stolberg in the Alberta Foothills. The well was drilled to a depth of 13,747 feet, but proved non-productive and had to be abandoned.

The oil strike west of Leduc by Imperial-Leduc No. 1 well on February 13, 1947, is of great interest, but it is too early to predict what the future holds for the area because several wells will have to be drilled to ascertain the extent of the field. The oil which is being produced from the Devonian limestone at a depth of slightly in excess of 5,000 feet is of good quality, ranging around 40° A.P.I. While there were no other large discoveries of oil in the Province during the fiscal year, the Princess and Lloydminster fields were extended, and considerable exploration was conducted determining substantial reserves of natural gas in the area east of the previously known Kinsella field, in the Princess field, and in the Pinhorn area near the United States border.

A discovery of importance was made near Eilk Point when approximately 1,000 feet of salt were encountered in a test well. Elk Point is located about 110 miles east and 25 miles north of Edmonton. Operations are being continued to determine the reserve of natural gas in the area, and if this is found in sufficient quantity there is a good possibility that a plant may be established for

*Based on well-head valuation of 5c per Mcf.

recovery of salt. The well is ideally located, being less than a mile from the North Saskatchewan River, which will afford an ample water supply, and it is only a few hundred feet from the Edmonton-Heinsburg branch of the Canadian National Railway.

The date for commencement of drilling on petroleum and natural gas leases issued by the Province was extended for one year to April 1, 1948, by Order in Council No. 86/47 because of continued restrictions and shortage of materials and equipment.

During the year, 1,209 applications for mineral rights were made at the offices of the Mining Recorders at Edmonton, Calgary and Peace River which required the preparation of a similar number of files for the Division. Several inquiries were made as to the availability of mineral rights mostly for petroleum and natural gas leases or reservations, by personal application and by correspondence. The Division dispatched a total of 17,591 letters during the fiscal year under review.

The natural resources of Alberta were transferred from the Dominion Government to the control of the Government of Alberta on October 1st, 1930, and the following tabulation shows the numbers and acreages of the various leases issued from that date to March 31st, 1947:

MINING LANDS LEASES

Type of Lease	Active at date of transfer	Issued	Reinstated	Divided	Cancelled	Renewed	Active at March 31st, 1947
Petroleum and natural gas	18,863	12,349	159	696	29,323	201	2,543
Petroleum and natural gas, crown reserve.....	5	20	.....	.....	25	.....	.....
Coal, provincial lands	620	619	4	7	686	196	368
Coal, school lands	60	47	1	.....	67	9	32
Quarrying	45	59	.....	.....	66	11	67
Quartz mining	4	.....	.....	.....	.....	.....	4
Salt	1	1	.....	.....	1	.....	1
Bituminous sands	4	3	.....	.....	6	.....	1
Miscellaneous	1	4	.....	.....	3	1	1
Dredging	32	18	.....	.....	40	.....	10
TOTALS.....	19,635	13,160	164	703	30,217	418	3,027

ACREAGE CONTAINED IN ABOVE LEASES

Type of Lease	Active at date of transfer	Issued	Reinstated	Cancelled	Renewed	Active at March 31st, 1947
Petroleum and natural gas	2,454,802	3,767,056	30,788	5,160,828	24,066	1,067,752
Petroleum and natural gas, crown reserve	6,160	22,561	.....	28,721	.....	.....
Coal, provincial lands	236,984	170,505	335	101,330	99,011	117,573
Coal, school lands	9,570	3,587	53	7,686	1,564	3,960
Quarrying	1,675	1,004	.....	1,134	152	1,393
Quartz mining	182	.....	.....	.....	.....	182
Salt	200	6,721	.....	200	.....	6,721
Bituminous sands	3,952	5,897	.....	6,015	.....	3,834
Miscellaneous	3,560	345	.....	43	22	3,840
TOTALS.....	2,717,085	3,977,766	31,176	5,395,957	124,815	1,205,255
Dredging (in miles)	145	74	.....	169	.....	50

STATEMENT OF BUSINESS TRANSACTED, 1946-47—PETROLEUM AND NATURAL GAS

	Number	Acres
Leases issued .....	.....	.....
Leases cancelled and relinquished	995	646,015
Leases reinstated	6	1,321
Drilling reservations granted	5	49,173
Drilling reservations terminated	6	54,907
Prospecting reservations granted	74	7,625,268
Prospecting reservations terminated	54	4,812,188
Fees, rentals and bonuses collected	\$287,754.05	
Royalties collected	610,208.93	
TOTAL.....	\$897,962.98	

COAL

	Number	Acres
Leases issued on provincial lands	36	6,953
Leases cancelled and relinquished on provincial lands	14	1,977
Leases reinstated on provincial lands	1	40
Leases issued on school lands	5	276
Leases cancelled and relinquished on school lands	6	1,074
Domestic permits issued	4	.....
Fees and rentals collected	\$112,123.77	
Royalties collected	317,098.87	
TOTAL	\$429,222.64	

QUARRYING

	Number	Acres
Leases issued	12	152
Leases cancelled and relinquished	1	15
Sand, stone and gravel permits issued	36	.....
Fees and rentals collected	\$ 1,501.09	
Royalties collected	8,760.60	
TOTAL	\$ 10,261.69	

MISCELLANEOUS

	Number
Bituminous sands leases issued .....	.....
Bituminous sands leases cancelled .....	.....
Permits to collect bitumen issued	2
Alkali permits issued	1
Quartz mining claims granted .....	.....
Quartz mining certificates of work issued .....	.....
Powers of Attorney (quartz) filed .....	.....
Placer claims granted	2
Powers of Attorney (placer) filed	31
Bar-digging permits issued .....	.....
Salt leases issued .....	.....
Geophysical licenses issued	23
Fees, rentals and royalties collected—	\$25,709.81

ASSIGNMENTS REGISTERED

Nature	Number
Petroleum and natural gas	199
Coal	41
Quarrying	2
TOTAL	242

PETROLEUM AND NATURAL GAS

Development of Leases.—The regulations provide that approved expenditures incurred in exploratory and development work on petroleum and natural gas rights, acquired under lease or reservation, may be accepted in satisfaction of rentals which otherwise would be payable in cash. During the fiscal year under review, rentals due the Province amounting to \$1,014,335.05 were satisfied from such expenditures. The total revenue received in cash for fees, rentals and bonuses was \$287,754.05 which, added to the expenditures accepted in lieu of rentals, makes a total of \$1,302,089.10.

Disposal by Public Tender.—Bonuses amounting to \$261.00 were accepted during the fiscal year at sales by public tender of petroleum and natural gas rights.

Number and Area of Leases.—During the year, no petroleum and natural gas leases were granted, and at the close of the fiscal year a total of 2,543 leases were active, containing an area of 1,067,752 acres.

Reservations.—Five reservations comprising 49,173 acres of petroleum and natural gas rights were granted during the year requiring the drilling of a well. A reservation of this type may not comprise in excess of 10,000 acres and requires the drilling of a well to be commenced within sixty days of the date on which the reservation becomes effective. Seventy-four prospecting reservations were issued under the regulations governing the reservation of petroleum and natural gas rights for geological and/or geophysical examination during the year, covering an area of 7,626,268 acres. At the close of the year three drilling

reservations covering 29,714 acres and 69 prospecting reservations were active containing an area of 7,408,391 acres.

COAL

New coal leases were mainly granted for the continuation of existing operations, and for new mines where the local market could not be economically supplied from operating mines in the vicinity. In the fiscal year, 41 leases were issued containing 7,229 acres, being made up of new and renewal leases. There are now 400 active leases comprising 121,533 acres.

During the current fiscal year the following quantity of coal, subject to Crown royalty, was mined:

Provincial lands' leases	4,026,576
School lands' leases	592,157
Coal lands' and mineral sales	1,077,886
TOTAL	5,696,619

Crown royalties collected on coal mined in Alberta since April 1st, 1907, are as follows:

CROWN ROYALTIES COLLECTED ON COAL

Fiscal Year	Royalty Paid	Fiscal Year	Royalty Paid
1907-08	\$ 7,621.67	1920-21	\$ 190,545.80
1908-09	5,322.39	1921-22	185,436.88
1909-10	153,559.98	1922-23	171,723.83
1910-11	218,932.88	1923-24	210,389.53
1911-12	104,894.55	1924-25	148,979.10
1912-13	142,997.79	1925-26	188,277.94
1913-14	147,198.75	1926-27	218,150.10
1914-15	104,489.77	1927-28	231,757.96
1915-16	67,190.17	1928-29	254,616.27
1916-17	149,447.82	1929-30	248,083.71
1917-18	144,634.75	1930-31 (First half)*	90,052.07
1918-19	175,687.66		
1919-20	181,641.80		
			\$3,741,633.17
		Provincial Lands	School Lands
1930-31 (Last half)*		\$105,126.51	\$ 5,014.29
1931-32		145,170.33	6,354.09
1932-33		143,800.01	4,971.78
1933-34		193,527.82	9,320.13
1934-35		176,122.43	12,365.39
1935-36		186,691.23	19,779.76
1936-37		175,214.33	18,596.00
1937-38		158,227.11	15,159.15
1938-39		143,070.78	9,270.23
1939-40		168,802.75	7,812.78
1940-41		200,045.68	15,841.24
1941-42		216,777.95	22,849.83
1942-43		235,613.19	24,700.43
1943-44		239,590.96	19,732.99
1944-45		251,136.50	22,094.01
1945-46		260,144.66	27,514.41
1946-47		286,486.89	30,611.98
			317,098.87
TOTAL			\$7,299,370.79

*Date of transfer of Alberta's natural resources from federal to provincial control, and date also of the creation of the Department of Lands and Mines, Alberta, October 1st, 1930.

Permits for Domestic Use.—Permits to mine coal on Provincial lands by strip-mining methods for domestic use may be issued to actual settlers on payment of a fee of one dollar and royalty at the rate of ten cents a ton. Each permit expires on March 31st following its date of issue. During the year, four permits were issued authorizing an extraction of 61 tons, none of which could be bartered or sold.

QUARRYING

Five quarrying leases were renewed on surveyed lands containing an area of 152 acres, five leases were issued and one renewed during the fiscal year for removing gravel from the bed of the North Saskatchewan River in the vicinity of Edmonton, and one was renewed on the bed of the Oldman River near Lethbridge. Extraction of 249,054 cubic yards of sand and gravel and 89,688 cubic

yards of limestone and shale from Provincial lands was reported for the calendar year of 1946.

At the close of the fiscal year, 67 leases were active containing an area of 1,393 acres.

Permits.—Sand, stone and gravel permits are issued on the beds of rivers and lakes at a fee of \$2.50 and a royalty of five cents a cubic yard, and expire on the 30th day of November following the date of issue. In this fiscal year, 36 permits were issued for the extraction of 63,049 cubic yards.

DREDGING

Ten dredging leases were issued covering 50 miles of the bed of the McLeod River in the vicinity of Peers.

QUARTZ

No new claims were recorded during the fiscal year. The claim in the Drumheller district for the recovery of bentonite was continued, and royalty of \$37.87 was paid representing 2½% of the value of the bentonite recovered.

The four quartz leases covering 181.8 acres issued by the Department of the Interior are still active.

PLACER

Two placer grants were issued during the year, on the McLeod River in township 55, range 13, west of the 5th meridian. Recovery of eight ounces of gold was reported during the year.

BITUMINOUS SANDS

The lease in the McMurray area containing 3,834 acres on which Oil Sands Limited carried on experimental and development work at Bitumont is still active, and during the year research by the Province was continued. Abasand Oils Limited continued its test hole drilling and other work along the Athabaska River.

SODIUM CHLORIDE (Common Salt)

This fiscal year the salt plant operated by Industrials Minerals Limited at Waterways reported extraction of 31,365 tons of salt on which royalty at the rate of twenty cents a ton was collected. This plant is located on the lease issued in 1937 covering 6,720.82 acres.

A summary appears showing the salt production by fiscal years.

SALT PRODUCTION	
Fiscal Years	Tons Produced
1938-39	5,420
1939-40	2,508
1940-41	11,720
1941-42	19,016
1942-43	20,672
1943-44	17,425
1944-45	28,315
1945-46	29,206
1946-47	31,365

SPECIAL PERMITS

Two annual permits for the collection of bitumen issuing from old wells in the Peace River district were again renewed. Collection of 1,588 gallons was reported during the year under review. A permit for the recovery of alkali accumulations was issued on an area of 60 acres in township 50, range 11, west of the 4th meridian.

DRILLING STATISTICS

The drilling and production of petroleum and natural gas wells in the Province are administered by the Petroleum and Natural Gas Conservation Board, 514 Eleventh Avenue West, Calgary, Alberta, and particulars as to drilling activity, production and statistical data are included in weekly, monthly and annual reports issued by the Board.

Technical Division

REPORT OF THE SUPERINTENDENT OF THE TECHNICAL DIVISION, T. W. DALKIN

In 1905, when 163,382,400 acres were carved out of the North-West Territories and declared to be the Province of Alberta, the pioneers had great faith in the future of Canada's Foothill Province. It is doubtful, however, if their faith and dreams envisioned, in a little over forty years, a Province that would produce over 300,000,000 bushels of wheat and bound into top place as Canada's meat packing Province. As for the natural resources, which are administered by the Department of Lands and Mines, over a quarter of the Province is covered with dense stands of timber and its coal and natural gas reserves are almost beyond calculation. Oil, that magic word in a world where States are becoming increasingly dependent upon it to survive, is here in abundance, and with the exception of about 1%, Alberta is responsible for Canada's output. It is no idle claim that the bituminous sands deposits contain the greatest known oil reserve in the world, and great outcrops of these rich "Tar Sands" stretch for miles along the banks of the mighty Athabaska River as it flows northward to Lake Athabaska.

It is in such a land that the Technical Division somewhat modestly and humbly presents its annual report for the year ending March 31st, 1947.

During this period 1,205 Notifications, just 28 less than the previous fiscal year, were issued, covering an area of 169,935.499 acres, more or less, and just about 3,500 acres less than the previous year.

NOTIFICATIONS ISSUED DURING FISCAL YEAR, APRIL 1st, 1946, TO MARCH 31st, 1947

Classification	Notifications	Acres
Homesteads	682	105,544.49
Sales (including lots in subdivisions)	206	13,849.72
Second Homesteads	39	5,786.28
Soldier Grants	9	1,409.22
Special Grants (including lots in subdivisions)	27	396.00
Revival of Titles	1	160.00
Exchange of Lands (Special Areas)	8	2,614.04
Certificates of Tax Sales Redemption	3	480.00
Exchange of Lands	12	3,042.00
School Lands Sales (including lots in subdivisions)	218	36,653.749
	<u>1,205</u>	<u>169,935.499</u>

DETAILS OF SALES IN SUBDIVISIONS WHICH ARE INCLUDED IN THE
206 NOTIFICATIONS REFERRED TO ABOVE

	Notifications	No. of Lots	No. of Blocks
Benton—5705 C.S.	1	1	....
Bindloss—7142 A.W.	1	2	....
Bodo—5201 E.O.	1	2	....
Canmore—39 Gen.	8	13	....
Cessford—949 C.N.	1	1	....
Coleman—6808 C.U.	1	....	6
Donnelly—204 C.L.	11	26	....
Excel—2693 B.C.	3	20	....
Hillcrest—4735 A.Q.	1	3	....
Jarvie—1308 C.L.	6	13	....
Kirriemuir—2689 B.C.	4	7	....
Maple Leaf—7742 A.L.	2	6	....
Milk River—2227 Y.	1	1	....
Mission—3920 E.X.	1	2	....
Monitor—5081 B.S.	4	8	....
Orion—7415 B.O.	1	2	....
Oyen (Swenson Addition)—3732 C.D.	2	2	....
Pancras—827 B.A.	1	1	....
Peace River Landing Settlement—5617 B.K.	4	10	....
Port McMurray Settlement—5068 A.N.	1	....	1
Retlaw—7285 A.Q.	2	3	....
Richdale—6978 A.W.	1	1	....
Rosemary—988 B.A.	1	1	....
Scapa—8731 D.L.	1	1	....
Shepard—4729 L.	1	2	....
Sibbald—5039 A.V.	3	4	....
Skiff—8569 A.U.	4	4	....
Stanmore—5041 A.V.	1	2	....
Sunnynook—4045 C.O.	1	1	....
Travers—927 A.Y.	3	4	....
Waiparous—3046 E.X.	3	3	....
Walsh—3644 B.	3	6	....
Wardlow—1703 C.P.	1	1	....
Whitla—191 A.G.	1	1	....
	81	153	....

SUBDIVISIONS INCLUDED IN THE 218 NOTIFICATIONS ISSUED UNDER
SCHOOL LAND SALES

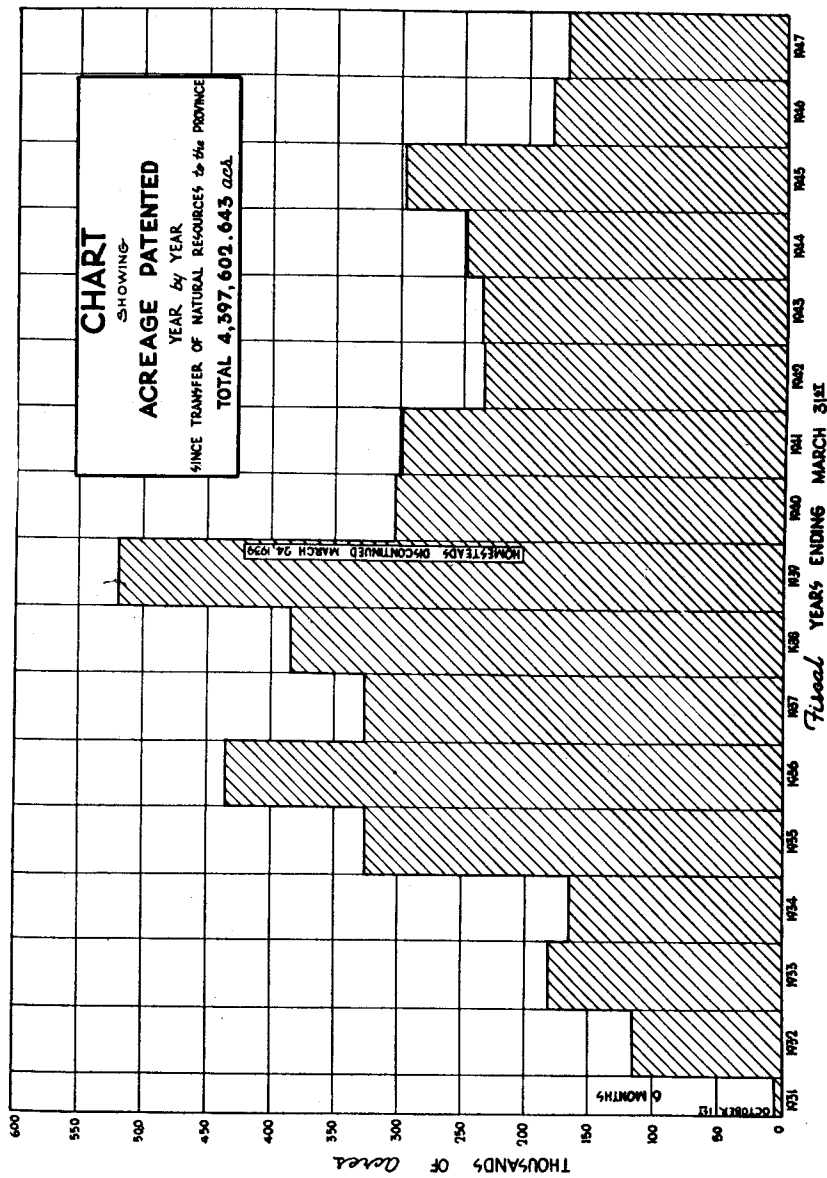
	Notifications	No. of Lots	No. of Blocks
McLennan Townsite—1394 E.U.	9	10	....

SUBDIVISIONS INCLUDED IN THE 27 NOTIFICATIONS ISSUED UNDER
SPECIAL GRANTS

	Notifications	No. of Lots	No. of Blocks
Cessford—949 C.N.	1	2	....
Kirriemuir—2689 B.C.	1	2	....
Monitor—5081 B.S.	1	1	....
Retlaw—7285 A.Q.	1	2	....
Sunnynook—4045 C.O.	2	2	....
	6	9	....

Number of Notifications issued giving area	1,109
Number of Notifications issued for Lots and Blocks	96
	1,205

Of the Notifications covering lots on Subdivision Plans, 81 were Sales, 9 were School Land Sales, and 6 were Grants.



A grand total of 4,397,602.643 acres have now been patented by the Province, whilst 3,662,998.29 acres of land have been returned to the Province through revestment or Tax Recovery Proceedings, and of this area 2,497,230.89 acres lie within the Special Areas and 1,165,767.40 acres lie outside the Special Areas.

TAX RECOVERY AND REVESTED LANDS
(INSIDE SPECIAL AREAS)

	As on March 31, 1946 Acres	From April 1, 1946, to Mar. 31, 1947 Acres	Total to Mar. 31, 1947 Acres
Tax Recovery	2,302,866.29	18,803.78	2,321,670.07
Revested	170,224.50	5,336.32	175,560.82
Total	<u>2,473,090.79</u>	<u>24,140.10</u>	<u>2,497,230.89</u>

TAX RECOVERY AND REVESTED LANDS
(OUTSIDE SPECIAL AREAS)

Tax Recovery	724,310.10	2,547.11	726,857.21
Revested	436,746.35	2,163.84	438,910.19
Total	<u>1,161,056.45</u>	<u>4,710.95</u>	<u>1,165,767.40</u>

Titles 11179 to 11315 cover Tax Recovery and Revested Areas inside and outside the Special Areas, from April 1st, 1946, to March 31st, 1947.

MINERALS ONLY (VOLUNTARY TRANSFER)

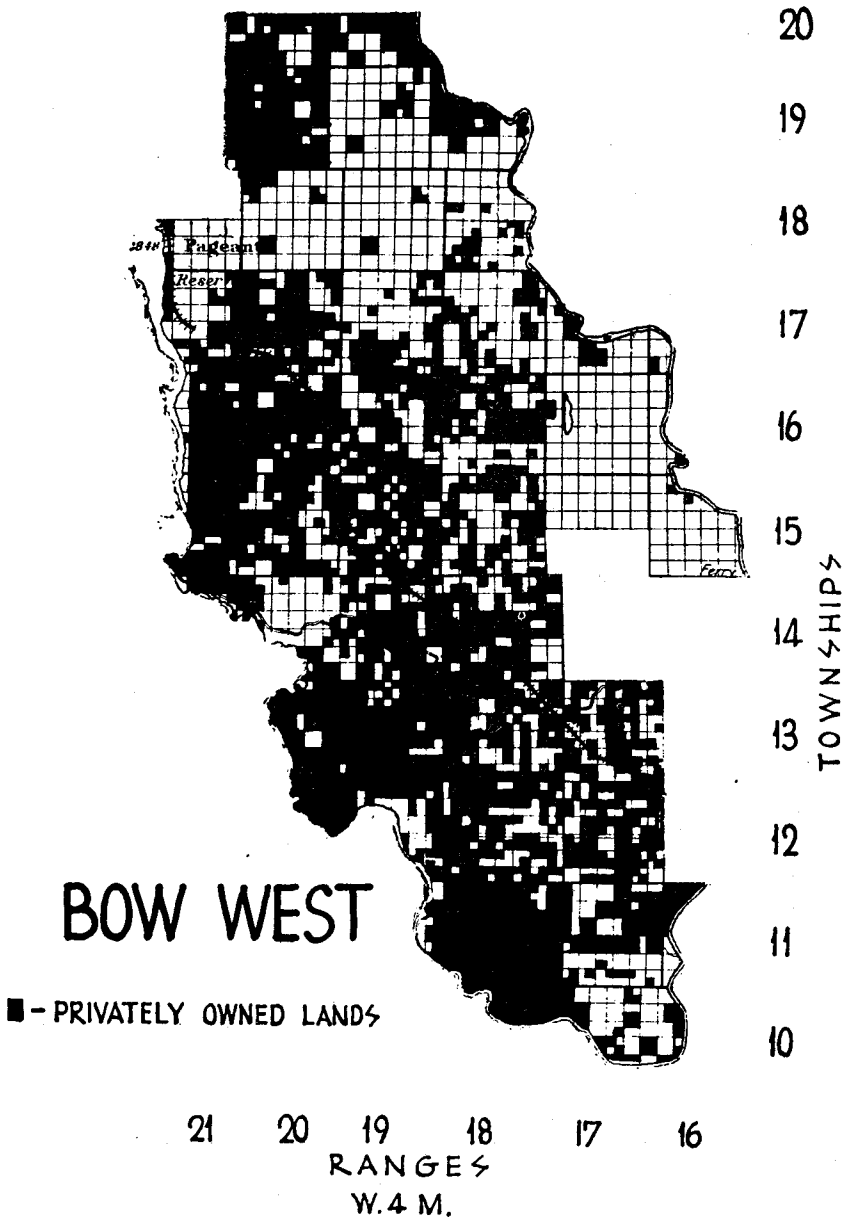
As on March 31, 1946	5,409.81 acres
From April 1st, 1946, to March 31st, 1947	26,989.51 "
Total to March 31st, 1947	32,399.32 "

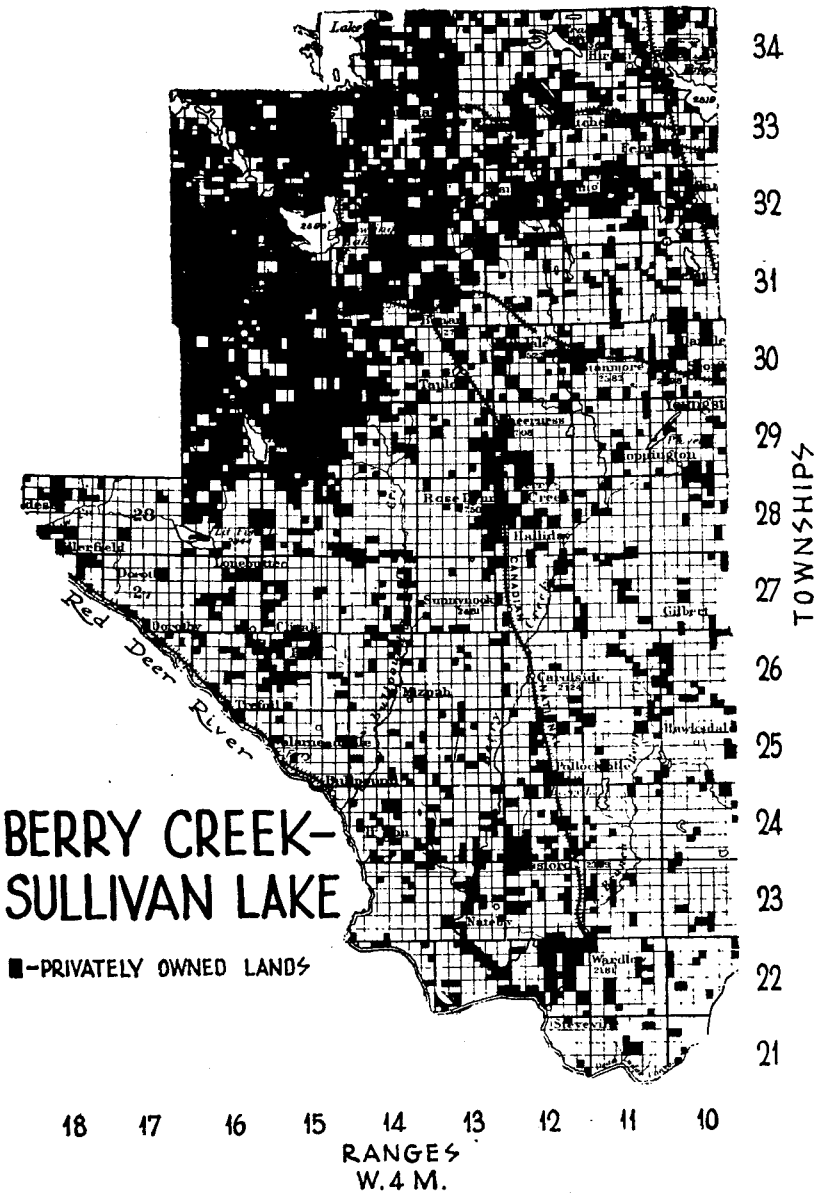
OTHER SOURCES, WHICH INCLUDE MUNICIPAL AFFAIRS, HUDSON'S BAY
COMPANY AND P.C. 837

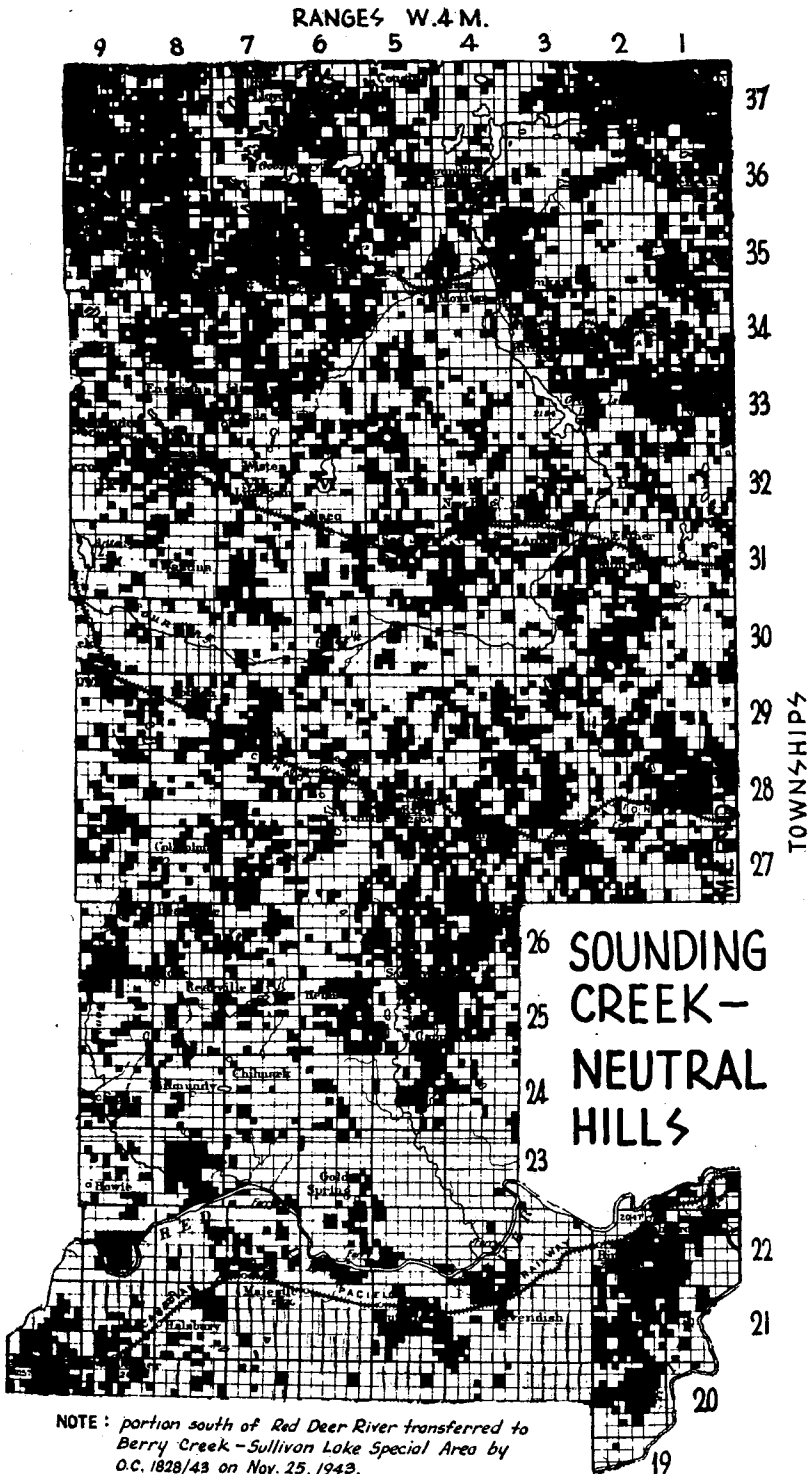
As on March 31, 1946	52,644.74 acres
From April 1st, 1946, to March 31st, 1947	1,891.73 "
Total to March 31st, 1947	54,536.47 "

Titles M.145 to M.249 cover the revested minerals for the fiscal year ending March 31st, 1947.

In submitting plans showing the state of ownership of the lands in the Special Areas, it is encouraging to report that during the fiscal year now under review titles to only 18,803.78 acres, more or less, were taken by the Crown through Tax Recovery Proceedings as compared with 64,903.93 acres for the previous year. This healthy tone is no doubt attributable to a certain measure of prosperity now being enjoyed by the farming community.







EXCHANGES OF LANDS

The wisdom of passing Order in Council No. 647 in the year 1941, whereby authority was granted to exchange the lands of resident settlers for Crown land within the Special Areas, becomes increasingly apparent from year to year, as is evidenced by the number of applications received.

By this Order in Council residents of the Special Areas, under authority of the Special Areas Act, can make application to exchange their own freehold land for available Crown land within the Special Areas. The objects of such exchanges are:

1. To consolidate the resident's holdings.
2. To establish the resident in a more favourable section of the Special Areas where sufficient land is available to provide him with an economic unit or where he will have access to better roads, schools, etc.

Under no circumstances are exchanges allowed with the object of selling when such exchanges are finally completed, and to safeguard against such contingencies all applicants must remain resident within the economic unit for one full year after the freehold land has been transferred to the Crown. Upon compliance with the one year residence clause, Notification is issued for the Crown land to which the resident has been transferred.

Before exchanges are approved by the Board and forwarded to Head Office for consideration the applicant must:

1. Pay all taxes up to and including the current year.
2. Discharge all encumbrances and indebtedness except Provincial encumbrances.
3. Pay the difference, if any, in the valuation for the Crown lands involved in the exchange.

Herewith are details of the completed exchanges within the Special Areas for the fiscal year under review:

EXCHANGES COMPLETED (INSIDE SPECIAL AREAS)—NOTIFICATIONS ISSUED DURING FISCAL YEAR				
File	Name	Land to Crown	Land to Applicant	Order in Council
2-201	Johnson, R. A.	N.E. 25-25-6-4	S.W. 22-25-6-4	535/45
2-205	Putzer, O.	N.W. 21-32-12-4	N.E. 16-33-12-4	12/ 4/45
2-200	Patterson, H. L.	N.W. 34-28-2-4	W $\frac{1}{2}$ 8-29-1-4	24/ 1/45
2-211	Hames, E.	N.E. 26-29-2-4	Fr. N. of Rly R/W	1665/45
2-194	King, H. R.	N.E. 27-21-4-4	N.W. 26-21-4-4	9/10/45
2-225	Clyne, Mrs. A. E.	E $\frac{1}{2}$ 17 & S $\frac{1}{2}$ 20-25-8-4	All 13-28-8-4	532/45
2-207	Cody, D. C.	S $\frac{1}{2}$ 23-27-15-4	N $\frac{1}{2}$ 25-28-15-4	1694/45
2-215	Paetz, M. H.	Pt. NW. 16 & Pt. N.E. 17-30-5-4	W $\frac{1}{2}$ 16-29-6-4	25/46
		All 2-26-9-4	All 20-29-9-4	1678/45
				12/10/45
				28/3/47

Hereunder is a list of various exchanges for which the Crown has received title to the freehold land involved and upon compliance with one year's residence clause then Notification will issue for the Crown land:

File	Name	Land to Crown	Land to Applicant	Order in Council	Expiry Date of Residence Clause
2-82	Frank Symes	N.W. 22-32-4-4	S.W. 24-31-4-4	71/46	2/ 5/47
2-79	A. J. Huitbrand	N.E. 24-32-10-4	N.W. 16-31-10-4	879/46	20/ 5/47
2-154	Anna C. Anderson	N $\frac{1}{2}$ 14, N $\frac{1}{2}$ & S.E. 13, N.E. 5 & S $\frac{1}{2}$ 10-31-9-4	All 10 and 15, 30-9-4	556/46	25/ 6/47
2-189	R. A. Johnston	S.W. 27-25-6-4	N.E. 12-26-6-4	898/46	20/ 5/46
2-191	G. Mullen	S.W. 20, S.W. 22, 18-18-4	W $\frac{1}{2}$ 5-17-18-4	19/46	2/ 1/46
2-226	A. W. Anderson	S $\frac{1}{2}$ 27-20-8-4	N $\frac{1}{2}$ 34-20-8-4	117/46	25/ 6/46
2-223	G. Hedges	S.E. 7-16-18-4	S.W. 28-16-19-4	1720/46	24/ 9/46
2-193	A. McAllister	S $\frac{1}{2}$ 26-16-19-4	S $\frac{1}{2}$ 12-16-19-4	245/46	6/ 2/46
2-195	A. Bilensky	N.W. 23-22-6-4	N.W. 27-22-6-4	224/46	6/ 2/46
2-209	G. Kruschel	W $\frac{1}{2}$ 5-33-1-4	S.E. 13-33-1-4	20/46	2/ 1/46
2-214	M. G. Rogers	N.W. 30-29-5-4	N.W. 18-29-5-4	508/46	18/ 3/46
2-218	O. G. Anderson	N.E. 15-27-14-4	N.W. 34-26-14-4	1809/45	15/11/45
2-229	S. Petroff	N.W. 12-35-3-4	S.E. 27-34-3-4	22/46	2/ 1/46
2-227	O. F. Carlson	S.E. 12-25-8-4	N.W. 24-25-8-4	24/46	2/ 1/46
2-169	J. A. Coulter	N.E. 18-25-13-4	S.E. 16-25-13-4	1163/44	2/ 8/44
2-125	A. W. Clarke	N.E. 28-17-19-4	S.E. 16-17-19-4	531/45	12/ 4/45
2-212	J. C. Bennett	W $\frac{1}{2}$ 30-11-17-4	E $\frac{1}{2}$ 14-11-17-4	1807/45	15/11/45
2-219	C. H. Carrington	E $\frac{1}{2}$ 8-17-18-4	S.E. 32-17-18-4	1666/45	9/ 9/45
2-213	A. Egeland (Mrs.)	S.W. 32-17-18-4	S.E. 32-14-18-4	1810/45	15/11/45
2-216	R. H. Meade	N.W. 11-28-3-4	S.E. 27-27-3-4	1679/45	12/10/45
2-228	W. H. Quinn (Mrs.)	S.W. 19-26-4-4	S.W. 15-26-4-4	21/46	2/ 1/46
2-206	G. A. Vert	S.E. 19-22-2-4	S.W. 23-34-3-4	1805/45	15/11/45
2-220	P. F. Wright	N $\frac{1}{2}$ 7-30-4-4	N.W. 13-30-5-4	1693/45	18/ 3/47
94261	M. Metz (Mrs.)	S.E. 36-13-8-4	S.W. 25-13-8-4	1805/45	15/11/45
					19/11/46

EXCHANGES COMPLETED (OUTSIDE SPECIAL AREAS)—NOTIFICATIONS ISSUED DURING FISCAL YEAR

It was not until November 15th, 1945, that Order in Council 1805/45 was passed to permit the exchange of lands outside the boundaries of the Special Areas, such exchanges, however, were restricted to areas frequented by drought, in order that settlers could be assured of a more adequate return from their labours by the consolidation of their holdings.

As in the case of exchanges of land in the Special Areas, the settler must demonstrate his good faith by performing settlement duties, including residence and cultivation or maintenance of live stock during a period of not less than one year subsequent to the approval of the exchange.

Exchanges are made on the basis of value for value following an investigation and corroboration of the representations made by the applicant. Where the Crown land is valued higher than the settler's land, then the settler must pay the difference.

In addition, the settler must also pay a further sum of \$25.00 in respect of each quarter section of Provincial land, or fraction thereof, comprised in the exchange and must deliver to the Department title to his freehold land free and clear of all encumbrances.

ROADWAYS

There were twenty-six (26) plans of surveys of roadways received from the Director of Surveys of the Department of Public Works and which surveys affected eighty (80) parcels of Crown lands. The areas were granted free for roadway purposes, except in cases where the lands had been alienated, and in such cases the areas required for the roadways were purchased and the purchaser of the Crown land compensated accordingly.

LICENSES OF OCCUPATION

Logging Roads

The activity in the lumber industry still continued during the last fiscal year and Licenses of Occupation were issued for logging roads as follows:

License No.	Name	Term	Project	Land
167	Imperial Lumber Camp	Pleasure	Logging Road	Twp. 69 Rgs. 10, 11 and 12, W. 4th.
168	Barrhead Sawmills	Pleasure	Logging Road	Twp. 63, Rgs. 8 and 9, W. 5th.
170	D. R. Fraser	Pleasure	Logging Road	Twp. 48, Rgs. 5 and 6, W. 5th.
172	Swanson Lumber Co....	Pleasure	Logging Road	Twps. 48, 49, 50, Rgs. 10 and 11, W. 5th
173	J. Young	Pleasure	Logging Road	Twp. 51, Rge. 9, W. 5th.
175	G. G. Fowler	Pleasure	Logging Road	Twps. 71 and 72, Rge. 22 and 23, W. 4th.
176	Swanson Lumber Co....	Pleasure	Logging Road	Twps. 52 and 53, Rge. 13, W. 5th.
178	South Wapiti Lumber Co. and Pinto Creek Coal Miles	Pleasure	Logging Road	Twp. 68-9-W. 6th.

MISCELLANEOUS LICENSES OF OCCUPATION

License No.	Name	Term	Project	Land
166	Marko, Paul	Pleasure	Private Road	N.W. ¼ 8-52-2-W. 5th.
169	Madison Natural Gas..	Pleasure	Pipeline	Twp. 20-3-W. 5th.
171	Canadian Pacific Ry....	Pleasure	Reservoir Site	S.E. ¼ 3-14-9-W. 4th.
174	British American Oil Co.	Pleasure	Pipeline	N.W. ¼ 6-20-2-W. 5th.

RIGHTS OF ENTRY

Many applications were received from Oil Companies, Coal Companies and individuals for Right of Entry upon Crown lands under the regulations established by O.C. dated the 19th day of May, 1942, and No. 689/42. Particulars of these applications are as follows:

File	Name	Board Order	Plan	Remarks
94	Standard & Nassau Oil Cos.	10610, 29/ 5/46	No	Sent back for seal and not returned
95	California Standard Co.	10583, 30/ 4/46	No	Description
96	McColl-Frontenac	10612, 29/ 5/46	Yes	
97	Alliance Oils Ltd.	10611, 29/ 5/46	No	Description
99	McColl-Frontenac	10747, 1/ 9/46	Yes	
100	City of Medicine Hat	10654, 2/ 7/46	No	
101	Standard Oil of B.C.	10745, 20/ 9/46	No	Returned for seal
102	Rosedale Collieries	10683, 22/ 7/46	No	Description
103	Imperial Oil	10738, 17/ 9/46	No	
104	Brazeau Collieries	10680, 22/ 7/46	No	Forest Reserve
105	Anglo Canadian	10748, 21/ 9/46	No	Well abandoned
107	McColl-Frontenac	10746, 21/ 9/46	Yes	
112	McColl-Frontenac	10852, 22/12/46	Yes	
113	Sterling Collieries	10739, 17/ 9/46	No	Forest Reserve
114	McColl-Frontenac	10855, 13/12/46	Yes	
115	City of Medicine Hat	10817, 18/11/46	No	
116	City of Medicine Hat	10816, 18/11/46	No	
117	McColl-Frontenac	10854, 30/12/46	Yes	
118	International Oil and Gas	10856, 30/12/46	No	Forest Reserve
119	Imperial Oil	10819, 18/11/46	Yes	
120	Covered by Right of Entry 105			
121	Brazeau Collieries	No Board Order yet		Forest Reserve
123	Imperial Oil Co.	10818, 18/11/46	Yes	
124	Royalite Oil Co.	10772, 3/10/46	No	
127	Imperial Oil Co.	10857, 13/12/46	No	Forest Reserve
128	Imperial Oil Co.			
129	California Standard and Imperial Oil	10897	Yes	
130	Covered by Right of Entry 129			
131	Wm. E. Lyons	10909, 28/ 2/47	No	Description
132	California Standard	No Board Order received, 24/3/47	No	
134	McColl-Frontenac	No Board Order received, 3/5/47		

NEW SURVEYS

The surveyors generally throughout the Province report continued activity in survey work, particularly in the cities and nearby rural areas, with the result that it just seems impossible to persuade any of them to undertake subdivision survey work in the unsubdivided areas of the Province, particularly in the northern section where many applications have been received for surveys. Due, however, to the kind co-operation of Mr. Ben Russell, Director of Water Resources, arrangements were made whereby he allowed one of his surveyors, Mr. J. Mould, to execute certain surveys in Townships 81 and 82, Range 7, West of the 6th Meridian. This survey was in exceedingly difficult terrain so that progress was not as rapid as was anticipated, and due to poor water supply and wintry conditions the survey was terminated early in October.

No survey work was done in Township 82 on account of the fact that the three deep valleys of Josephine Creek, Mulligan Creek and Fourth Creek were encountered in Township 81. These valleys range from 300 to 700 feet deep, 400 to 700 feet deep and 500 to 700 feet deep respectively.

Copies of the new plan of survey have been received which show that 72 quarter sections were surveyed, but due to the fact that some of these quarter sections are broken by these deep valleys, not all the land can be considered ideal for settlement.

Beaver Hill Lake Survey

Early in the spring of last year negotiations were entered into with the Department of Public Works, whereby Mr. J. W. Doze undertook to survey the accrued areas around Beaver Hill Lake in Townships 51, 52 and 53, Ranges 17 and 18, West of the 4th Mer. This survey was found necessary, due to the fact that the waters of Beaver Hill Lake have receded considerably since the last plan of survey of this area, and in order to properly administer the accrued areas adjoining the lake it was imperative that such a survey be made.

Due again to the large amount of survey work available to surveyors it was impossible for the surveyor to commence this survey until October of last year. The survey, however, was completed, but the preliminary plans of survey have not

yet been received in the Department, but from information available it would seem that the greatest recession of the waters of the lake took place on the east shore, where in some places the lake receded to a depth of about two and one-half miles.

Survey East of Spirit River

Reference was made in last year's report to the above survey, which is located in Township 77, Range 1, West of the 6th Mer., Township 78, Range 1, West of the 6th Mer., and Township 78, Range 2, West of the 6th Mer.

Final lithographed plans have been received from Ottawa, duly approved by our Director of Surveys on the 20th February, 1946. These plans now show that the whole of Township 78, Ranges 1 and 2, West of the 6th Meridian, have been surveyed and practically the whole of Township 77, Range 1, West of the 6th Meridian, excepting the southerly one section and a half throughout the township.

Lassiter Project

At the beginning of January, 1947, a small survey party was organized comprising one instrument man and two chain men, who were given instructions to proceed to Wanham, the jumping-off point for the area to be cleared and broken for veteran land settlement in Townships 79 and 80, Ranges 1, 2 and 3, West of the 6th Meridian. This area is surveyed land, and in the process of clearing the timber it is most important, in fact essential, that the survey monuments be not disturbed or destroyed.* As the land was covered with a great depth of snow and as the cut lines of the survey were not discernible, due to a new growth of timber, it is quite understandable that the clearing crew would find it almost impossible to locate the survey monuments. It was, therefore, expedient and in the interests of economy that the survey monuments be marked, otherwise great expense would be entailed in having the land re-surveyed, which would also add to the delay in eventually establishing the veterans on the land.

It is generally recognized that the winter of 1946-47 was one of the severest in the west, and on this account and other difficulties the clearing programme was temporarily halted and the small survey party returned to Edmonton.

This clearing project has aroused great interest, so much so, that due to the numerous enquiries it was found necessary to prepare for distribution a special plan to meet enquiries.

NEW MAPS

As reported last year, the Department is still embarrassed, due to the fact that the printers have been unable, an account of certain difficulties, including a paper shortage, to deliver a supply of our 8 mile map of the Province. The situation was somewhat alleviated, due to the fact that it was possible to obtain a re-print, amounting to 1,325 copies, of our 16 mile map.

The tracings of the Province have been brought up to date, particularly with reference to topography in the north-west corner, and it is to be hoped that the orders placed with the printers for supplies of the new up-to-date 16 mile map and 8 mile map will have been received in the Department before the next Annual Report is written.

New maps received in the Division during the year are as follows:

4,800 copies of the maps showing soil zones, issued June, 1946.

5,295 copies of our revised Calgary Agency Map, issued June, 1946.

3,000 copies of the map of our Edmonton Agency were re-run in August, 1946.

2,000 copies showing the revised boundaries of the Agricultural Lease areas, were printed in July, 1946.

1,325 copies of the 16-mile map were re-printed in October, 1946.

Due to the increased cost in printing and paper, it was necessary in January, 1947, to revise upwards our price list of the various maps available from this Division.

DOMINION GOVERNMENT PUBLICATIONS

It is a pleasure to report the continued close co-operation between this Division and the Surveyor General's Branch at Ottawa, undoubtedly resulting to the benefit of both offices.

Following the usual practice, Ottawa still submits preliminary copies of new maps to this Division to be checked so that the latest available information and any corrections may be made before final publication. The following maps were checked during the year:

Milk River Sheet No. 16, particularly with reference to the boundaries of Cypress Hills Forest Reserve.

Lac La Biche-Peter Pond Sheet No. 73 N.W. Topographical, showing all additions and corrections as of July, 1946.

Whitecourt-Athabasca No. 83 N.E. Topographical Sheet. This map was checked in September, 1946.

The Edmonton Sheet Map No. 315 was checked in 1946, in preparation for an up-to-date revised edition of this map. This map includes the Leduc area where enthusiasm has reached a new high, due to the discovery of oil. This caused an unprecedented demand for this map, and it was most unfortunate that in March of this year advice was received from Ottawa that the Edmonton Sheet Map No. 315 was completely out of print. In the meantime the numerous requests for maps of this area are being met by substituting other publications.

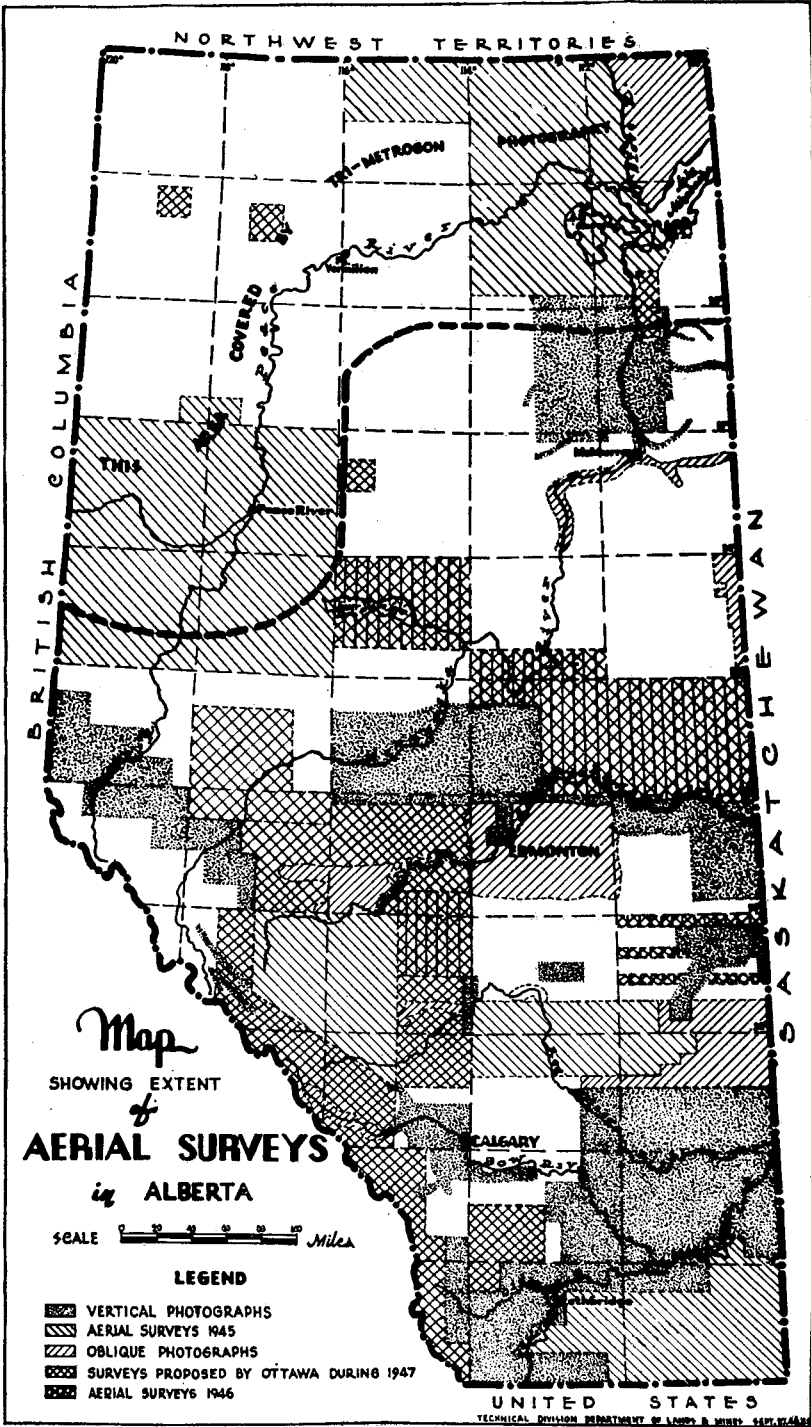
AERIAL SURVEYS

As there is no doubt aerial surveys will loom more and more in importance in the mapping of our Province, particularly on those unsurveyed areas about which there is little topographical information at the present time, it is deemed advisable that this report should contain an up-to-date map showing the situation in our Province in as far as aerial surveys are concerned. From the legend on this map it will be noted that there are two types of surveys, one vertical and the other oblique. The map also shows the aerial surveys that were completed by the Dominion Government in 1946; such surveys are indicated by diagonal lines both ways, upon which are superimposed vertical lines running north and south. The extent of the programme outlined by Ottawa for the 1947 season is shown by diagonal lines running both ways.

GENERAL DRAFTING AND LEGAL DESCRIPTIONS

With many of the returning veterans anxious to locate upon the land and the widespread interest generally in the mines and minerals of the Province, particularly oil, the last year was one of exceptional activity. The records show 1,189 legal descriptions prepared for Agricultural Leases alone, which number does not include the hundreds of descriptions for other documents nor amendments to existing descriptions.

In order to cope with the applications of the Mining Lands Branch for Petroleum and Natural Gas reservations, it was necessary to search the minerals in 277 townships and prepare plans on linen tracing cloth for the records. In view of the potential value of minerals, the correct ownership of such minerals is of paramount importance, and meticulous care is exercised in securing this information, especially where drilling operations are contemplated. This information as to ownership is first obtained from our records and then checked with the records of the Land Titles Office.



It is not generally known that patents have been issued by Ottawa for about 16,000,000 acres of minerals, and that titles have been subsequently issued for separate minerals or a combination of certain minerals underlying the same land; for example, one title may be issued for coal only, or petroleum only, or natural gas only, or building stone only, or iron only, or copper only, or coal and petroleum, or petroleum and natural gas, or coal, petroleum and natural gas, or iron and mica, or gold and silver, or all minerals excepting coal, or all minerals excepting natural gas, or all minerals excepting coal, petroleum and natural gas, or all minerals excepting asphalt, petroleum and natural gas, or all hydro-carbons excepting coal, or all minerals excepting gold and silver, radium and radium bearing minerals, and so on, and some such titles have been issued in one owner's name or several owners' names with fractional interest or interests.

With the realization of the numerous titles covering this vast mineral area and the various combinations of minerals and fractional interests in the titles, it is of course inevitable that certain conflicts arise as to the true ownership of some of the minerals. Such cases are at once taken up with Ottawa and also with the Land Titles Offices in order to rectify the records.

This year under review seems to have reached a record high in the number of maps, plans and sketches that have been prepared for various purposes. Possibly among the more interesting plans that were prepared was one of the whole of the Province on a scale of 8 miles to the inch showing detailed information in order that consideration could be given to the definite reservations of areas that should, in the interests of the Province generally, be reserved from settlement. On this plan was shown outlined in green the area that should be reserved from settlement, as proposed by the Department of Lands and Mines, and outlined in red was the area to be reserved from settlement, as proposed by the Soils Branch of the University of Alberta. Within these green and red boundaries all the alienated lands were shown, and it was found that some of these lands had already been patented or were subject to Grazing Leases, Homesteads, Pre-emptions, Soldier Grants, Sales, Agricultural Leases, Cultivation Leases, Surface Leases, Accrued Area Leases, or Fur Farms. With this detailed information the Department is now in a position to give serious consideration to the question of what lands should be reserved from settlement in the interests of the Province as a whole.

Other plans that have been prepared dealt with the withdrawal from, addition to, or abolition of, certain National Parks within our Province.

Alberta has already transferred to Canada an area of 206.29 acres, more or less, as an addition to the east entrance to the Banff National Park, and negotiations were on the way to transfer another small area of 106 acres, more or less, to the Banff National Park at the junction of Spray Lakes Creek with the Spray River, in Township 22, Ranges 10 and 11, West of the 5th Meridian. Ottawa, however, pointed out that the minerals should also be transferred and also the minerals under the additional area at the east gate of the Park. As the Province had no authority to transfer such minerals, it was deemed necessary to make an amendment to the Provincial Lands Act. This was done at the last session of the Legislature, which gave the Lieutenant Governor in Council the power to—

“Authorize the Minister to enter into an agreement or agreements with His Majesty in the right of Canada which transfers to Canada for National Park purposes all the right, title and interest of His Majesty in the right of Alberta to any lands in Alberta including road allowances, surveyed roads, road diversions, and mines and minerals,”

and at the same time Ottawa agreed to pass the necessary Act of Parliament.

This will enable negotiations to proceed between the Province and the Dominion, whereby—

1. The minerals under the addition to the east gate of the Banff National Park can be transferred to the Dominion.
2. The surface and minerals at the junction of the Spray River and Spray Lakes Creek will be added to the Banff National Park.
3. An area including minerals will be taken from the Cooking Lake Forest Reserve and added to Elk Island National Park.
4. Buffalo National Park, Wainwright, will be abolished and will be transferred to the Province, including minerals.
5. Nemiskam National Park will be abolished and will be transferred to the Province, including minerals.
6. A portion of Waterton Lakes National Park will be transferred to the Province, including minerals.

Reports from the Photostat, Mimeograph and Map Mounting sections of the Division show increased activity even over last year. More and more it is realized from an economic and efficient point of view that the photostat machine was a wise investment, and its services are now well known throughout all branches of the Government, as is evidenced by the increased work that is being received from outside our own Department.

The mimeograph machine cut 858 stencils and ran off 248,594 copies, as against 706 stencils and 196,072 copies for the previous year.

MINERAL TAXATION

On the 20th May, 1892, the first homestead entry in Township 50, Range 26, West of the 4th Meridian, was granted to Carl Huff, who located on the S.W. $\frac{1}{4}$ of Section 31 of this township. Others followed in rapid succession, coming mostly from continental Europe, to find new homes in the Canadian West. Those who did not take up Government homesteads bought land from the Canadian Pacific Railway Company at what would appear now to be unbelievably low prices, or from the Hudson's Bay Company, or School Lands from the Crown.

The first patent in this township was issued by the Dominion on the 31st October, 1895, to Gustav Rudolf, for the N.E. $\frac{1}{4}$ of Section 36.

As the years rolled by the settlers acquired titles to their farms and prospered upon the rich land, but it was not, however, until February, 1947, in the depth of winter, that it was realized that underneath the rich black loam, approximately 5,000 feet below, were riches in even greater abundance. The countryside buzzed with excitement which reverberated beyond the confines of our Province and Dominion, for almost within the shadow of our Parliament Buildings in Edmonton, about 17 miles south-west as the crow flies, the Imperial Oil Company Limited struck oil on Legal Subdivision 5 of Section 22, Township 50, Range 26, West of the 4th Meridian. This major strike immediately made the settlers, far beyond the confines of this township, oil conscious, and from then on enquiries poured into the Mineral Taxation Branch of this Division by letters and personal calls, all anxious to find out whether they owned the minerals underlying their farms. Oil companies and promoters immediately began to scour the land to seek control of the oil rights from the owners, and though many of these owners found wealth undreamed of whilst peacefully tilling the land and tending cattle, others were doomed to bitter disappointment. It was hard to realize and understand why the descendants of a man who had pioneered upon the land in the early 1890's should find that they did not own the minerals underlying their land, whilst their next-door neighbours, who did

not arrive on the scene until years later, suddenly found themselves secure for life, from the oil below the surface of the earth. The reasons for this situation have been explained many times to enquirers, personally and in correspondence, and it would seem appropriate that the circumstances responsible for the situation should be outlined in this Annual Report.

When homesteads were granted by the Dominion Government upon lands then known as the North-West Territories, patents were issued to the settlers from which the mines and minerals were not reserved.

On the 12th of May, 1887, however, the Minister of the Interior in a memorandum made a recommendation that a clause be inserted in all patents from the Crown for lands in the North-West Territories, situate West of the Third Meridian, reserving to Her Majesty, Her Successors and Assigns forever, all mines and minerals which may be found to exist within, upon, or under such lands, together with full power to work the same, and for this purpose to enter upon, and use and occupy the said lands or so much thereof and to such an extent as may be necessary for the effectual working of the said minerals, or the mines, pits, seams and veins containing the same.

The Minister of Justice, to whom the foregoing Memorandum was referred, concurred in the recommendation, except in the case of patents for lands which had already been sold or disposed of for valuable consideration, and on the 31st of October, 1887, P.C. No. 1070 was passed, giving effect to this recommendation.

As already explained above, the first settler entered upon Township 50, Range 26, W. 4th Meridian, in 1892, and due to the passing of this Privy Council Order No. 1070 he, nor any of the subsequent homestead settlers, did not acquire any minerals with the surface rights. In this township, however, the surface and minerals in every odd numbered section were granted to the Canadian Pacific Railway and the surface and mineral rights in Sections 8 and 26 were granted to the Hudson's Bay Company. These Companies in selling their lands to settlers at that time did not reserve the mines and minerals, and this accounts for the fact that such settlers, or subsequent purchasers from them, acquired the mines and minerals whilst the homestead pioneers who obtained a grant from the Crown did not obtain them.

Needless to say, the Canadian Pacific Railway Company and the Hudson's Bay Company have for some years now adopted the policy of the Crown whereby all Agreements for Sale definitely reserve all mines and minerals.

This strike of oil at Leduc has accelerated the interest of all settlers in the minerals underlying their farms, not only in the Leduc area, but throughout the Province generally, with the result that there is more or less a mild boom in the payment of mineral taxes. Taxation in any form is generally unpopular, but there is now a noticeable difference in the attitude of the mineral owners who now pay up their taxes and arrears with an eagerness bordering on enthusiasm.

The Mineral Taxation Act came into force in 1941, and the majority of the acreage taxes are subject to interest and penalties from the inception of the Act.

At the last session of the Legislature, The Mineral Taxation Act was again amended and consolidated and included the following salient facts:

1. All minerals are subject to an acreage tax not exceeding 5c an acre. In the years 1941 to 1944 inclusive, the tax was at the rate of $\frac{1}{2}$ c per acre, in 1945 the tax was at the rate of 1c per acre, and for 1946 and 1947 the tax was struck at $1\frac{1}{2}$ c per acre.
2. The principal mineral in a producing area is assessed and taxed, which tax is in addition to and not in substitution for the acreage tax referred to above. The boundaries of the producing areas remain the same as last

year, but additional producing areas are anticipated in the forthcoming year.

3. Provision is made for the Crown to acquire title to the minerals for which the taxes are in arrears.
4. Provision is also made for owners of minerals to voluntarily transfer their minerals to the Crown, free and clear of all encumbrances and the taxes and penalties outstanding against them shall be cancelled and the former owner shall be relieved from the payment thereof.
5. Possibly the most important addition is the inclusion in the Act of certain schedules which specify the manner in which the values of the minerals shall be computed for assessment purposes.

Due to the increased volume of work in the Mineral Taxation Branch, immediate provision must be made to secure additional assistance to cope with the work.

For the past fiscal year the following taxes were received:

Producing Area	\$125,742.91
Acreage Tax	231,062.93
Fees for Mineral Tax Certificates	31.00
	<u>\$356,836.84</u>

This represents a decided increase as compared with the figures for the previous years, which are as follows:

	Producing Area	Non-producing Area	
1941	\$ 24,532.61	\$ 50,588.32	\$ 75,120.93
1942	27,463.60	66,901.08	94,364.68
1943	40,308.01	61,767.14	102,075.15
1944	31,255.85	61,527.44	92,783.29
1945 (Arrears 1944)	71.80	160,054.33	160,126.13
Total			<u>\$524,470.18</u>

UNEARNED INCREMENT TAX

At the last session of the Legislature there were certain amendments made to the Provincial Lands Act, which included an amendment to Section 86A, which deals with the application of the Unearned Increment Tax. This section was amended by striking out Sub-section 1 and by substituting therefor the following:

"(1) There shall be payable to the Minister,—

"(a) upon the registration in the Department of any assignment of an agreement for sale of land or of any lease, cultivation permit, license of occupation, timber license, permit to cut timber, reservation of petroleum and natural gas rights, or any other form of agreement for the development of a natural resource; or

"(b) upon the consent of the Minister to a sub-lease of a lease, permit to cut timber or timber license,—a tax at the rate of ten per cent on the increase in value thereof, at the time of such registration or consent, over the last preceding value thereof, excluding in all cases the cost of the improvements or development work actually made or done upon or in connection with the land with respect to which the agreement for sale, lease, cultivation permit, license of occupation, timber license, permit to cut timber, reservation of petroleum and natural gas rights, or any other form of agreement for the development of a natural resource has been made."

This had the effect of making the increase in value of petroleum and natural gas reservations and other agreements for the development of natural resources, subject to a 10% tax. There were 756 various assignments registered, from which the sum of \$34,975.60 was realized in taxes.

Details of the various assignments are as follows:

	No.	Amount
P. & N.G. Reservations	1	\$840.00
"	36	
P. & N. G. Leases	5	Royalty Agreement
"	11	\$1,013.84
"	137	
Quarrying Lease	9	Royalty Agreement
Coal Mining Leases	3	\$ 78.00
"	6	\$14,773.67
School Land Miscellaneous	17	
"	3	\$ 13.02
School Land Grazing Permits	1	
"	11	\$ 110.27
School Land Cult. and Graz.	36	
"	63	\$ 1,337.67
School Land Sales	84	
"	9	\$ 378.60
P.L. Cult. and Graz.	13	
"	24	\$ 203.12
P.L. Summer Resorts	24	
"	2	\$ 10.50
P.L. Miscellaneous Leases	1	
"	3	\$ 10.50
P.L. Grazing Permits	3	
"	2	\$ 5.34
P.L. Cultivation Permits	13	
"	5	\$ 52.52
P.L. Grazing Leases	5	
"	102	\$ 2,448.12
License Timber Berths	67	
"	3	\$13,461.61
Timber Sales	8	
Timber Permit Berths	1	\$ 124.70
"	6	\$ 71.47
Special Timber Permits	17	
"	9	\$ 42.65
License of Occupation	13	
Timber Berths	2	
"	1	
Total	756	\$34,975.60

This tax is greatly in excess of the previous year, which amounted to only \$4,333.56. However, the amount of \$4,333.56 does not represent the full year, as the unearned increment tax became applicable on the 1st of July, 1945.

In addition to the \$34,975.60, open accounts brought in an additional \$1,398.14, and the amount held in suspense at the end of this fiscal year was \$1,224.92.

Amount paid in full	\$34,975.60
Amount held in suspense	1,224.92
Open accounts	1,398.14
Total	\$37,598.66

Accounting Division

REPORT OF THE ACCOUNTANT, J. W. PATRICK

The various statements that are a part of this report give in detail the collections and expenditures for the year. The following points are to be noted therefrom:

A.—Statement of Receipts from All Sources

Gross receipts from all sources amounted to \$6,196,130.56 as against \$5,316,087.01 for 1945-46, an increase of \$880,043.55.

Net receipts from all sources amounted to \$5,194,729.63, as against \$4,366,684.24 for 1945-46, an increase of \$828,045.39.

There was an increase of refunds from \$949,402.77 in 1945-46 to \$1,001,400.93 in 1946-47 amounting to \$51,998.16.

In addition to ordinary refunds such as overpayments, applications not granted, etc., there were the following:

80% of monies received on crop share from Cultivation Leases amounting to \$202,462.07 refunded to taxing authorities.

80% of monies received on crop share from Agricultural Leases amounting to \$6,128.64 refunded to taxing authorities.

25% of monies received on Grazing Leases and Permit Taxes amounting to \$17,037.49 refunded to taxing authorities.

All Tax Recovery monies are refunded to the Improvement or Municipal District in which the lands are situated. An amount of \$49,072.16 was refunded to these districts during the year. The unapplied receipts carried forward will be refunded in due course.

B.—Statement of Receipts Income Account:

A surplus of \$2,660,970.69 on Income Account was shown for 1946-47 as compared with \$2,302,915.07 for the previous year, an increase of \$358,055.62.

Net revenue amounted to \$3,880,425.42 as against \$3,403,473.33 for 1945-46, an increase of \$476,952.09. Main increase and decreases were as follows:

	Increase	Decrease
FISHERIES ACT:		
Fish Royalty	\$ 19,994.87	.....
GAME ACT:		
Fur Tax	18,406.75	.....
Game Licenses	54,681.74	.....
LANDS AND GRAZING:		
Grazing Rentals, Fees, etc. ....	.....	\$ 19,273.35
MINERAL TAXATION ACT:	196,710.71	.....
MINING LANDS:		
Coal Rentals, Fees, etc. ....	.....	42,459.61
Coal Royalty	26,342.23	.....
Petroleum and Natural Gas Fees, Rentals, etc. ....	.....	80,084.04
Petroleum and Natural Gas, Royalties ....	.....	14,110.14
SCHOOL LANDS:		
Administration of School Lands, Reim- bursements	25,000.00	.....
Interest on Sales .....	.....	19,006.09
Petroleum and Natural Gas, Royalties	35,401.56	.....
Royalties, Leases, Rentals, etc. ....	.....	16,367.82
TIMBER:		
Timber Rentals, Fees, Dues, etc.	255,742.79	.....
UNEARNED INCREMENT TAX	32,750.23	.....
MISCELLANEOUS	3,222.29	.....
NET REVENUE INCREASE .....	.....	476,952.09
	<u>\$668,253.17</u>	<u>\$668,253.17</u>

Comments on increases and decreases of revenue:

Fish Royalty—This is the first year that royalty has been charged.

Grazing Rentals, Fees, etc.—1945-46 was the final year, in most cases, for paying off installments of consolidated arrears on Grazing Leases. This accounts for the decrease in revenue in 1946-47.

Mineral Taxation Act—The Assessment Roll for 1945 was subject to appeal until 1946, with the result that the 1945 Tax Notices were not mailed until September, 1946, payment to be made before October 31st, 1946. The 1946 tax notices were mailed January 15th, 1947. The collection of the 1945 levy on producing areas is therefore included with the 1946-47 collections. In addition, the acreage tax was increased from 1c to 1½c per acre in 1946.

D.—Statement of Expenditure:

Expenditure on Income Account for the year, amounted to \$1,219,454.73, an increase of \$118,896.47. Salaries showed an increase of \$63,147.74 and a payment of \$67,265.91 was made to School, Municipal and Improvement Districts for the loss of the right to tax minerals for municipal and school purposes in 1945 and 1946.

E.—Statement of Receipts—Agricultural Advances:

Collections for Agricultural Advances amounted to \$44,684.63 as against \$12,849.80 for 1945-46, an increase of \$31,834.83. This was due to the policy of collection by the use of elevator lists in the year 1946-47.

F.—Statement of Receipts and Payments—Special Areas Trust Account:

Increased payments are due to:

1. A payment of \$100,000.00 to the Province of Alberta as a compromised settlement of old municipal accounts aggregating \$1,084,485.22 due to the Province.

2. Construction costs of Youngstown Old Folks' Home amounting to \$66,647.53 and new Youngstown Shop amounting to \$39,526.71.

G.—Statement of Receipts and Payments—Special Districts Trust:

It is to be noted that the Special Grant from the Department of Education to the Special Areas amounting to \$39,546.77 in 1945-46, has been discontinued.

A grant of \$40,000.00 for roads from the Department of Public Works was received in 1946-47, although not received in the previous year. School Requisitions amounted to \$204,767.80 as against \$180,096.93 in 1945-46, an increase of \$24,670.87.

Hospital Requisitions amounted to \$42,677.97 as against \$35,429.74 in 1945-46, an increase of \$7,248.23.

Payments amounting to \$212,107.26 for Maintenance of Roads include a payment of \$68,152.92 for 1945-46 Equipment Rental to Special Areas Trust. The net figure would therefore be \$143,954.34 plus \$22,478.26 (still owing to Special Areas Trust for Equipment Rental for 1946-47), or a total cost of \$166,432.60.

H.—Statement of Receipts—Special Areas and Special Districts:

General Tax Collections were \$32,877.58 as against \$220,763.10 for 1945-46, an increase of \$101,114.48. This is accounted for by an increased mill rate from 24½ mills to 32 mills and a slightly better crop year.

Special Area Trust Collections were \$258,421.76 as against \$165,044.35 for 1945-46, an increase of \$93,377.41.

During the year, a system was devised for the Bookkeeping Machine Posting, whereby receipts would be posted to the accounts immediately on issue, rather

than to wait for the end of the week as formerly. This will insure that accounts are up-to-date at all times and will give more efficiency in handling.

The Accounting staff on the Tax Accounts and Agricultural Advances of the Special Districts was transferred from the Accounts Branch to the Supervisor of Special Districts. The Accountant, however, will still be responsible for the work done.

The Accounting staff was divided into groups with a clerk in charge of each group. With more responsibility being placed on each group, there should be increased efficiency.

The increased Revenue and Expenditure as shown in the statements has increased the volume of work handled in the Accounting Division. Better results would be obtained with more experienced staff, as the rapid turnover of personnel since the beginning of the war has continued throughout the past year. It is to be hoped that this condition will change in the near future.

INDEX TO STATEMENTS

- A.—Statement of Receipts from all Sources.
- B.—Statement of Receipts—Income Account.
- C.—Statement of Receipts—Capital Account.
- D.—Statement of Expenditure for the year ending March 31st, 1947.
- E.—Statement of Receipts—Agricultural Advances.
- F.—Statement of Receipts and Payments—Special Areas Trust Account.
- G.—Statement of Receipts and Payments—Special Districts Trust Account.
- H.—Statement of Receipts—Special Areas and Special Districts.
- I.—Statement of Receipts by Branches.
- J.—Statement of Receipts—School Lands Branch.
- K.—Alberta School Lands Trust Fund Balance Sheet.
- L.—Alberta School Lands Sales Revenue Account.
- M.—Statement of Receipts and Expenditure for seventeen year period, 1930-1947.
- N.—Statement of Receipts by Branches for seventeen year period, 1930-1947.

STATEMENT OF RECEIPTS FROM ALL SOURCES

From April 1, 1946, to March 31, 1947

STATEMENT A

	Gross Receipts	Refunds	Net Receipts
Income Account	\$4,188,195.68	\$ 307,932.00	\$3,880,263.68
Capital Account	22,196.84	771.50	21,425.34
Reimbursement of Previous Year's Expenditures	3,877.17		3,877.17
School Lands Trust Fund	143,268.70	165.18	143,103.52
Special Areas and Special Districts	716,658.31	11,284.94	705,383.37
Unapplied Receipts carried forward (subject to refund)			
Suspense	986,910.17	630,485.16	356,425.01
Tax Recovery	56,005.31	49,326.28	6,679.03
Improvements	3,199.77	1,435.87	1,763.90
Purchase of Improvements on Agricultural Leases	1,349.00		1,349.00
Purchase of Improvements on School Lands	3,319.53		3,319.53
Land Patents Cultivation Crop Share	3,983.73		3,983.73
Land Patents Agricultural Lease Crop Share	2,355.41		2,355.41
School Land Cultivation Crop Share	37,258.85		37,258.85
Grazing Rentals, Fees, etc.	27,552.09		27,552.09
	<u>\$6,196,130.56</u>	<u>\$1,001,400.93</u>	<u>\$5,194,729.63</u>

STATEMENT B.

STATEMENT OF RECEIPTS—INCOME ACCOUNT

From April 1, 1946, to March 31, 1947

	Gross Receipts	Refunds	Net Revenue
INCOME ACCOUNT:			
Fisheries Act:			
Angling Permits	\$ 20,974.19	\$ 2,129.74	\$ 18,844.45
Boat Licenses	110.00		110.00
Fish Royalty	20,000.87	6.00	19,994.87
Fishing Licenses	26,881.00	105.00	26,776.00
Miscellaneous	878.43		878.43
Game Act:			
Fur Tax (less Commissions)	111,110.69	4,902.85	106,207.84
Game Licenses	168,705.50	14,472.09	154,233.41
Registered Trap Lines	30,284.61	50.00	30,234.61
Sale of Fur	22,176.08	15,093.95	7,082.13
Miscellaneous	1,331.86		1,331.86
Lands and Grazing:			
Agricultural Leases	13,824.35	7,732.41	6,091.94
Cultivation Rentals, Fees, etc.	27,299.41	17,440.81	9,858.60
Fur Farm Rentals and Fees	957.90	48.50	909.40
General Sales Interest	517.96	1.37	516.59
Grazing Rentals, Fees, etc.	233,136.31	17,818.94	215,317.37
Hay Fees, Dues, etc.	6,120.24	510.75	5,609.49
Improvement Collection Fees	591.87		591.87
Surface Rentals	3,796.31	6.08	3,790.23
Miscellaneous	34,591.60	2,497.69	32,093.91
Mineral Taxation Act	356,969.08	132.24	356,836.84
Mining Lands:			
Coal Mines Act Sundry Revenue	6,446.02	46.00	6,400.02
Coal Rentals, Fees, etc.	108,493.04	476.00	108,017.04
Coal Royalty	286,497.64	.75	286,486.89
Petroleum and Natural Gas Fees, Rentals, etc.	276,319.64	3,402.61	272,917.03
Petroleum and Natural Gas Royalties	538,129.09	1,898.76	536,230.33
Miscellaneous Rentals, Fees, etc.	36,517.10	66.95	36,450.15
School Lands:			
Administration of School Lands, Reimburse-			
ments	65,000.00		65,000.00
Interest on Sales	49,512.29	108.19	49,404.10
Royalties, Leases, Rentals, etc.	397,854.37	187,430.41	210,423.96
Timber:			
Timber Rentals, Fees, Dues, etc.	1,282,208.59	30,879.54	1,251,329.05
Miscellaneous	8,621.99	15.73	8,606.26
Unearned Increment Tax	37,936.40	337.74	37,598.66
Miscellaneous:			
Casual	10,229.04	315.90	9,913.14
Salaries and Expenses, Reimbursements	1,056.39		1,056.39
Services and Supplies	2,356.45		2,356.45
Tax Recovery Office Fees	679.37	5.00	674.37
Total (carried to Statement A)	\$4,188,195.68	\$ 307,932.00	\$3,880,263.68
Special Districts (carried to Statement E):			
Interest on 1936 Seed Grain Advances	32.92		32.92
Interest on 1936-37 Feed and Fodder Advances...	38.56		38.56
Interest on 1937-38 Feed and Fodder Advances...	64.73		64.73
Interest on 1938-39 Feed and Fodder Advances...	25.53		25.53
TOTAL INCOME ACCOUNT	\$4,188,357.42	\$ 307,932.00	\$3,880,425.42

STATEMENT C.

STATEMENT OF RECEIPTS—CAPITAL ACCOUNT

From April 1, 1946, to March 31, 1947

	Gross Receipts	Refunds	Net Revenue
Land Sales Principal	\$ 22,196.84	\$ 771.50	\$ 21,425.34

STATEMENT E.

STATEMENT OF RECEIPTS—AGRICULTURAL ADVANCES

From April 1, 1946, to March 31, 1947

	Principal	Interest
1936-37 Feed and Fodder	\$ 260.33	\$ 38.56
1937-38 Feed and Fodder	3,375.33	64.73
1938-39 Feed and Fodder	348.07	25.53
1936 Seed Grain	2,884.19	32.92
1937 Seed Grain Implemented Loan Account	14,404.61	65.31
1938 Agricultural Advances Implemented Loan Account	22,921.72	241.44
1939 Agricultural Advances	21.89	
To Statement H	\$ 44,216.14	\$ 468.49

STATEMENT F.

STATEMENT OF RECEIPTS AND PAYMENTS—SPECIAL AREAS TRUST ACCOUNT

For the Year ended March 31, 1947

Cash in bank, April 1, 1946		\$522,535.50
Receipts:		
Grazing rentals	\$147,827.45	
Cultivation rentals	84,324.94	
Equipment rentals	68,209.92	
Sale of Improvements	10,663.01	
Repayment of advances to hospital districts	5,250.00	
Bank interest	4,417.56	
Land sales, principal and interest	2,458.00	
Recoverable advances, net	181.70	
Miscellaneous	3,299.10	
		<u>326,631.68</u>
		\$849,167.18
Payments:		
*Government of the Province of Alberta	\$100,000.00	
Advances to hospital districts	95,000.00	
Construction costs, Youngstown Home	66,647.53	
Purchase of equipment	64,159.38	
Construction costs, Youngstown Shop	39,526.71	
Community pastures	8,202.60	
Travelling expenses	5,516.68	
Purchase of real estate	5,475.00	
Grass seed	2,791.98	
Construction of dams and dugouts	1,337.43	
Stationery and office supplies	1,091.10	
Advisory Board expenses	757.88	
Insurance	664.26	
Miscellaneous	919.62	
		<u>392,090.17</u>
Cash in bank, March 31, 1947		\$457,077.01

*Compromise settlement of accounts aggregating \$1,084,485.22 due to the Government of the Province of Alberta as at March 31, 1946.

STATEMENT G.

STATEMENT OF RECEIPTS AND PAYMENTS—SPECIAL DISTRICTS TRUST ACCOUNT

For the Year ended March 31, 1947

Cash in bank, April 1, 1946		\$327,336.94
Receipts:		
Special Districts tax	\$321,877.58	
Province of Alberta road Grant	40,000.00	
School lands crop share	12,355.93	
Sale of equipment and materials	1,219.00	
Funds transferred from municipal districts	1,134.78	
Bank interest	1,082.76	
Recoverable advances, net	386.07	
Miscellaneous	961.73	
		<u>379,017.85</u>
		\$706,354.79
Payments:		
Maintenance of roads	\$212,107.26	
School requisitions	204,767.80	
Hospital requisitions	41,677.97	
Relief and public welfare	17,024.99	
Water wells	13,160.96	
Maintenance of offices	3,258.36	
Telephones and telegrams	3,246.27	
Postage	1,150.00	
Land titles office fees	929.10	
Stationery and office supplies	804.27	
Assessment expense	761.33	
Travelling expenses	532.35	
Pounds	381.75	
Freight, express and cartage	330.00	
Miscellaneous	840.07	
		<u>501,972.48</u>
Cash in bank, March 31, 1947		\$204,382.31

GOVERNMENT OF THE PROVINCE OF ALBERTA
LANDS AND MINES DEPARTMENT
EXPENDITURE CLASSIFIED BY APPROPRIATIONS AND CHARACTER
FOR THE YEAR ENDED MARCH 31, 1947
INCOME ACCOUNT

Service	1101 Minister's Office	1102 General Office	1103 Advisory Board	1106 Calgary Land Agency	1109 Peace River Land Agency	1113 Northern Alberta Forest District	1114 Crow's Nest-Bow River Forest Reserve	1116 Clearwater Forest Reserve	1117 Brazeau-Athabasca Forest Reserve	1120 Cypress Hills Forest Reserve	1123 Petroleum and Natural Gas Division	1124 The Mines Act	1125 Supervision of Grazing	1127 Fire Fighting, General	1128 Postage	1129 Tree Nurseries	1132 Radio Communication	1134 Special Areas Board	1135 The Game Act	1136 The Fisheries Act	1137 Bounties for Destruction of Pests	S.W. 10/46-47, Payments to School, Municipal and Improvement Districts for loss of mineral tax	Totals
Advertising	\$ 1,054.13	\$ 3,128.24					\$ 3,325.10	\$ 759.35	\$ 1,108.91								\$ 1,200.04		\$ 5,021.26	\$ 9,959.99			\$ 3,128.24
Automobiles		2,321.70												\$ 5,478.12									24,750.48
Board		213.68				\$ 47.25																	5,478.12
Books and binding																							260.93
Bounties for destruction of pests						1,788.58	1,775.08		411.96	\$ 324.36									5,484.09		\$ 38,222.50		38,222.50
Buildings and sites																							9,784.07
Compensation													250.00										250.00
Drainage and irrigation		6,402.79				1,952.82	6,224.38	688.23	577.81	12.69		\$ 1,041.48	139.55	4.20			2,841.29		3,874.75	1,996.92			25,756.91
Equipment												1,322.15											1,322.15
Examinations							149.41	609.59	337.70	317.46			294.70	5.50		\$ 70.50							1,813.32
Feed and seed				\$ 28.46			132.83	4.55	9.83			4.70	4.88						10.92	52.73			307.85
Fees and commissions		60.85			\$ 17.75				.91	7.90			2,109.91										2,109.91
Fencing	5.29	305.63		216.19	58.84	711.01	289.26	176.05	144.48	23.38		34.82	6.54	6,553.16		60.92	924.87		1,012.96	729.50			11,252.90
Freight, express and cartage						355.53	60.55	27.85	95.75				14.29	694.21			605.53		281.34	1,102.60			3,237.65
Heating, lighting and power														115.70									115.70
Hospital and medical supplies																				25.95			25.95
Laundry and cleaning		6,329.12																					6,329.12
Legal fees and expenses		107.52		1.25				126.79	149.93			23.45	356.70	2,588.15		53.84	1,086.08		312.46	5,507.98			10,849.34
Miscellaneous expenses and supplies		81.01		2.00		316.60	218.59					7.93							2.00				113.94
Newspapers and periodicals	17.00	88.94		717.87	692.16	766.85	327.69	117.00	200.38	21.14		23.59	9.27		\$ 12,550.82		60.00		250.22	78.62			16,004.55
Postage	100.00																						27,901.18
Printing, stationery and office supplies	38.51	18,433.82		369.96	221.15	300.97	118.37	140.60	155.63			2,031.40		168.00		13.48	831.31		3,403.40	1,842.58			17,637.16
Rates, rentals and insurance	41.03	708.67				550.47	863.30	85.45	397.35	23.70		83.43		12,363.90			834.92		358.85	1,158.09			31,298.08
Repairs and replacements	374.81	6,068.09		156.96	27.06	7,200.14	1,733.07	1,592.48	2,658.95	323.20		287.48	975.70				3,868.18		2,945.36	3,086.60			721,128.79
Salaries	7,754.00	280,346.08		18,897.21	14,751.35	91,415.87	46,674.50	25,334.11	34,304.66	3,443.00	\$ 36,008.74	34,914.21					28,631.19	\$ 58,637.51	35,005.74	41,019.36			36,008.74
Special services																							6,701.09
Surveys		6,399.76																		301.33			6,686.97
Telegrams and telephones	752.87	2,693.82		180.71	54.40	137.05	152.23	118.31	86.69			709.03	37.75				63.82		927.61	772.68			77,484.06
Travelling expenses	308.82	16,588.64	\$ 457.27	172.80	29.10	21,709.59	2,848.84	1,765.61	2,162.25	334.40		6,939.90	663.20	259.84			1,882.24		6,424.85	14,936.71			66,229.12
Wages		53.50				3,425.83	6,537.27	2,715.30	3,632.74	184.00			8,468.54	21,093.22			5,545.31		1,426.20	10,794.69			
TOTAL: Income Account	\$ 10,446.46	\$ 350,331.86	\$ 457.27	\$ 20,743.41	\$ 15,853.81	\$ 130,960.80	\$ 71,762.37	\$ 33,994.66	\$ 46,405.86	\$ 4,697.77	\$ 36,008.74	\$ 47,423.57	\$ 13,499.03	\$ 49,156.00	\$ 12,550.82	\$ 2,551.26	\$ 48,374.78	\$ 58,637.51	\$ 66,742.01	\$ 93,368.33	\$ 38,222.50	\$ 67,265.91	\$ 1,219,454.73

CAPITAL ACCOUNT

Apprn No.	Service	Contract Labour	Repayable Advances and Loans	Totals
1181	Charitable Purposes, Hospitalization and Medical Services in Special Areas		\$ 21,373.99	\$ 21,373.99
1182	Abandonment of Mining Properties	\$ 112.00		112.00
TOTAL: Capital Account		\$ 112.00	\$ 21,373.99	\$ 21,485.99

STATEMENT H.

STATEMENT OF RECEIPTS—SPECIAL AREAS AND SPECIAL DISTRICTS

For the Year ended March 31, 1947

	Gross Receipts	Refunds	Net Revenue
General Tax—Statement G	\$324,009.97	\$ 2,132.39	\$321,877.58
Social Service Tax	22,604.99	16.81	22,588.18
Hail Tax	637.84	.....	637.84
	<u>\$347,252.80</u>	<u>\$ 2,149.20</u>	<u>\$345,103.60</u>
Special Districts Collections—Less Taxes	57,700.74	592.36	57,108.38
Statement G	\$ 57,140.27		
Less: Hail Tax Commissions	31.89		
	<u>\$ 57,108.38</u>		
Special Areas Trust Receipts	266,965.14	8,543.38	258,421.76
Statement F	\$326,631.68		
Less: Equipment Rentals	68,209.92		
	<u>\$258,421.76</u>		
Agricultural Advances—Statement E	44,684.63	.....	44,684.63
Collections for Department of Agriculture:			
Bran and Sawdust	41.00	.....	41.00
Horse Vaccine	14.00	.....	14.00
	<u>\$716,658.31</u>	<u>\$ 11,284.94</u>	<u>\$705,373.37</u>

STATEMENT I.

STATEMENT OF RECEIPTS BY BRANCHES

For the Fiscal Year ending March 31, 1946, and March 31, 1947

	Fiscal year ending March 31, 1945	Fiscal year ending March 31, 1946
INCOME ACCOUNT:		
Fisheries Branch	\$ 41,318.68	\$ 66,603.75
Game Branch	226,133.25	299,089.85
Lands and Grazing Branch	286,725.61	274,869.40
Timber Branch	1,003,395.03	1,259,935.31
Mining Lands Branch	1,360,104.48	1,246,501.46
Mineral Tax	160,126.13	356,836.84
Unearned Increment Tax	4,848.43	37,598.06
School Lands Branch	299,800.41	324,828.06
Miscellaneous	20,909.94	14,000.35
CAPITAL ACCOUNT:		
Lands Sales Principal	18,252.17	21,425.34
TRANSFERRED TO OTHER DEPARTMENTS	813.77	3,932.17
SCHOOL LANDS TRUST FUND	180,555.66	143,103.52
SPECIAL DISTRICTS	291,579.92	402,211.98
SPECIAL DISTRICTS AGRICULTURAL ADVANCES	12,849.80	44,684.63
SPECIAL AREAS	165,044.35	258,421.76
UNAPPLIED RECEIPTS CARRIED FORWARD:		
Suspense	240,384.46	363,104.04
Improvements	1,403.24	1,763.90
Purchase of Improvements on Agricultural Leases	303.00	1,349.00
Purchase of Improvements on School Lands .....	.....	3,319.53
Land Patent Cultivation Crop Share	3,791.12	3,983.73
Land Patent Agricultural Lease Crop Share	649.79	2,355.41
School Lands Cultivation Crop Share	25,902.84	37,258.85
Grazing Rentals, Fees, etc.	21,792.16	27,552.09
	<u>\$4,366,684.24</u>	<u>\$5,194,729.63</u>

STATEMENT J.

STATEMENT OF RECEIPTS—SCHOOL LANDS BRANCH

From April 1, 1946, to March 31, 1947

	Receipts	Refunds	Net Revenue
INCOME ACCOUNT:			
Interest on Sales	\$ 49,512.29	\$ 108.19	\$ 49,404.10
Grazing Rentals, Fees, etc.	30,110.23	358.44	29,751.79
Hay Fees, Dues, etc.	1,371.64	66.25	1,305.39
Cultivation Rentals, Fees, etc.	233,425.74	176,870.19	56,555.55
Surface Rentals	1,221.36	5.00	1,216.36
Miscellaneous Leases	2,998.49	1,354.15	1,644.34
Timber Rentals, Fees, Dues, etc.	51,004.06	3,814.73	47,189.33
Coal Rentals, Fees, etc.	4,137.73	31.00	4,106.73
Coal Royalty	30,611.98		30,611.98
Petroleum and Natural Gas Fees, Rentals	15,648.57	236.55	15,412.02
Petroleum and Natural Gas Royalties	74,789.73	811.13	73,978.60
Miscellaneous Sale of Improvements	12,767.56	3,807.97	8,959.59
Miscellaneous	4,767.28	75.00	4,692.28
	<u>\$ 512,366.66</u>	<u>\$ 187,538.60</u>	<u>\$ 324,828.06</u>
TRUST ACCOUNT:			
School Lands Sales Principal	143,268.70	165.18	143,103.52
	<u>\$ 655,635.36</u>	<u>\$ 187,703.78</u>	<u>\$ 467,931.58</u>

STATEMENT K.

ALBERTA SCHOOL LANDS TRUST FUND—BALANCE SHEET, MARCH 31, 1947

As at March 31, 1947, the fund amounted to \$11,816,570.78 made up as follows:			
Cash		\$	226,415.12
Accounts Receivable			8,276.06
Debentures of the Dominion of Canada:			
(a) Issued in settlement of the sum standing to the credit of the fund when the natural resources were transferred to the Province on October 1, 1930		\$9,564,569.20	
(b) Purchased by the Province since October 1, 1930, from payments of principal on school land sales, book value	1,686,958.81		
			11,251,528.01
Unpaid principal on school land sales:			
(a) Not due		\$ 64,277.67	
(b) Due or in arrears		266,073.92	
			330,351.59
			<u>\$11,816,570.78</u>

STATEMENT L.

ALBERTA SCHOOL LANDS SALES—REVENUE ACCOUNT

From April 1, 1946, to March 31, 1947

Arrears Interest as at March 31, 1946	\$ 81,390.88	
Interest Charges	22,135.65	
Interest Revenue		\$ 49,404.10
Court Orders—Re Farmer's Creditors Arrangement Act		67.91
Interest written off—Re Cancelled School Land Sales		16,327.02
Arrears Interest as at March 31, 1947		37,727.50
	<u>\$ 103,526.53</u>	<u>\$ 103,526.53</u>

STATEMENT M.

STATEMENT OF RECEIPTS AND EXPENDITURE
For 17 year period, 1930-1947

	Gross Receipts	Refunds	Net Receipts	Net Revenue on Income Account	Total Expenditures from Appropriations	Surplus on Income Account
1930-31	\$ 713,921.44	\$ 4,036.85	\$ 709,884.59	\$ 572,965.86	\$ 224,197.32	\$ 348,768.54
1931-32	1,135,415.64	6,407.90	1,129,007.74	1,032,307.57	690,448.51	341,859.06
1932-33	968,929.06	14,659.34	954,269.72	861,477.66	571,861.51	289,616.15
1933-34	1,068,650.48	16,772.56	1,051,877.92	937,095.80	462,407.61	474,688.19
1934-35	1,337,394.04	26,445.07	1,310,948.97	1,169,496.15	522,967.18	646,528.97
1935-36	1,310,890.21	47,051.55	1,263,838.66	1,152,475.78	504,544.57	647,931.21
1936-37	1,807,855.35	42,707.76	1,765,147.59	1,646,496.09	649,776.50	996,719.59
1937-38	1,789,276.20	68,941.29	1,720,334.91	1,606,156.50	521,564.72	1,084,591.78
1938-39	2,125,754.87	47,657.63	2,078,097.24	1,864,712.75	709,624.60	1,155,088.15
1939-40	2,629,622.16	72,133.44	2,557,488.72	1,944,098.82	708,605.34	1,235,493.48
1940-41	2,941,633.35	87,813.81	2,853,819.54	2,031,494.38	670,278.85	1,361,215.53
1941-42	3,967,861.44	499,420.02	3,468,441.42	2,593,485.14	847,555.32	1,745,929.82
1942-43	3,920,989.65	264,632.43	3,656,357.22	2,753,159.00	806,948.41	1,946,210.59
1943-44	4,504,913.73	416,578.27	4,088,335.46	2,821,784.73	861,907.08	1,959,877.65
1944-45	5,329,173.91	815,106.35	4,514,067.56	3,484,630.31	1,041,839.92	2,442,790.39
1945-46	5,316,087.01	949,402.77	4,366,684.24	3,403,473.33	1,100,558.26	2,302,915.07
1946-47	6,196,130.56	1,001,400.93	5,194,729.63	3,880,425.42	1,219,454.73	2,660,970.69
	\$47,064,499.10	\$4,381,167.97	\$42,683,331.13	\$33,755,735.29	\$12,114,540.43	\$21,641,194.86

STATEMENT OF RECEIPTS BY BRANCHES

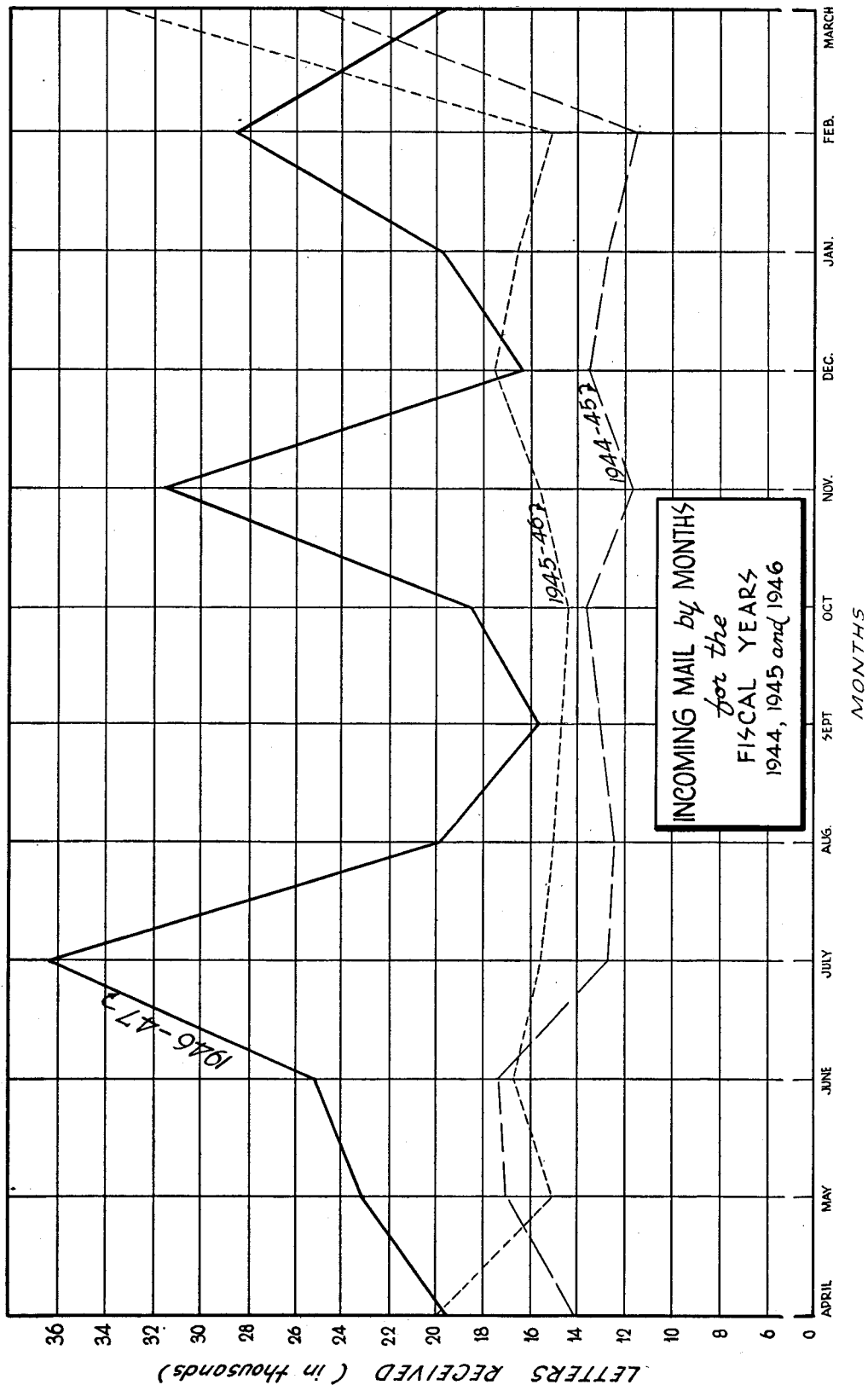
For 17 year period, 1930-1947

STATEMENT N.

	Fisheries Branch	Game Branch	Land and Grazing Branch	Unearned Increment Tax	Timber Branch	Mining Lands Branch	School Lands Branch	Mineral Tax	Miscellaneous	Land Sales Principal	Transferred to Other Departments	School Lands Trust Fund	Special Areas and Special Districts	Unapplied Receipts	Trust Accounts	Total Receipts
1930-31	\$ 4,827.54		\$ 74,996.87		\$ 121,085.59	\$ 372,055.86				\$ 6,705.39		\$ 113,749.01		\$ 15,009.29	\$ 1,455.04	\$ 709,884.59
1931-32	20,203.47		114,664.30		174,400.21	450,681.94	\$ 271,760.18		\$ 597.47	8,438.60		43,947.85		36,319.67	7,994.05	1,129,007.74
1932-33	15,827.10		114,389.01		123,707.36	391,813.38	215,327.81		413.00	7,522.85		40,065.81		26,737.56	18,465.84	954,269.72
1933-34	15,989.61		117,789.55		153,818.78	477,724.11	168,571.71		3,202.04	7,938.25		56,136.23		40,924.25	9,783.39	1,051,877.92
1934-35	19,949.89		115,599.20		225,063.17	477,296.68	327,787.36		3,799.85	9,765.20		80,132.43		40,316.83	11,238.36	1,310,948.97
1935-36	21,418.16		89,910.52		303,964.31	547,483.63	191,587.19		7,111.97	9,643.65		62,555.30		39,133.13	30.80	1,263,838.66
1936-37	24,317.93	\$ 117,989.34	111,610.39		331,036.53	757,247.46	293,763.48		10,530.96	10,867.23		55,799.89		51,803.38	181.00	1,765,147.59
1937-38			181,412.38		360,380.18	818,609.83	234,027.61		11,726.50	9,525.14		48,442.09		56,211.18		1,720,334.91
1938-39			159,415.63		298,434.00	1,032,502.10	358,197.11		16,163.91	8,593.93		86,322.26	\$ 68,299.49	50,168.81		2,078,097.24
1939-40			148,286.74		359,786.16	1,050,221.46	371,626.59		14,177.87	8,702.54	\$ 19,888.05	83,664.73	418,068.06	83,066.52		2,557,488.72
1940-41			125,544.35		612,175.84	945,333.30	337,777.81		10,663.08	9,511.39	851.49	76,589.34	633,745.14	101,627.80		2,853,819.54
1941-42	22,298.59	161,122.17	145,981.43		732,179.40	1,073,084.50	368,056.87	\$ 75,120.93	15,066.17	10,416.91	7.36	127,874.26	594,010.46	143,222.37		3,468,441.42
1942-43	21,975.49	157,280.99	161,376.91		774,172.70	1,215,777.93	311,612.10	94,364.68	16,331.46	11,100.94	200.00	145,341.71	543,062.32	203,759.99		3,656,357.22
1943-44	29,194.09	172,229.45	151,059.84		843,106.86	1,112,506.30	395,325.32	102,075.15	16,267.66	15,810.92	103.10	292,923.42	674,346.65	283,386.70		4,088,335.46
1944-45	33,264.10	185,638.47	220,599.44		843,680.79	1,663,316.88	420,062.24	92,783.29	25,225.25	22,125.48	78.32	349,104.99	445,110.94	213,077.37		4,514,067.56
1945-46	41,318.68	226,133.25	286,725.61	\$ 4,848.43	1,003,395.03	1,360,104.48	299,800.41	160,126.13	20,909.94	18,252.17	813.77	180,555.66	468,393.63	294,226.61		4,365,603.80
1946-47	66,603.75	299,089.85	274,869.40	37,598.66	1,259,935.31	1,246,501.46	324,828.06	356,836.84	14,000.35	21,425.34	3,932.17	143,103.52	\$4,550,355.06	\$2,119,678.01	\$ 49,148.48	\$42,682,250.69
	\$ 337,188.40	\$1,319,483.52	\$2,585,231.57	\$ 42,447.09	\$8,520,322.22	\$14,992,261.30	\$4,890,111.85	\$ 881,307.02	\$ 186,187.48	\$ 196,345.93	\$ 25,874.26	\$1,986,308.50	\$4,550,355.06	\$2,119,678.01	\$ 49,148.48	\$42,682,250.69

STATEMENT OF MINING LANDS REVENUE BY FISCAL YEARS
RECEIVED BY THE PROVINCE FOLLOWING OCTOBER 1, 1930

Fiscal Years	COAL				PETROLEUM AND NATURAL GAS				SALT				QUARRYING		DREDGING	SAND, STONE & GRAVEL		QUARTZ		PLACER & BAR-DIGGINGS		BITUMINOUS SANDS		MISCELLANEOUS		Provincial Lands	School Lands	TOTAL	Fiscal Years	
	Provincial Lands		School Lands		Provincial Lands		School Lands		Provincial Lands		School Lands		Provincial Lands	Provincial Lands	School Lands	Provincial Lands	School Lands	Provincial Lands	School Lands	Provincial Lands	School Lands	Provincial Lands	School Lands							
	Fees and Rentals	Royalties	Fees and Rentals	Royalties	Fees and Rentals	Royalties	Fees and Rentals	Royalties	Fees and Rentals	Royalties	Fees and Rentals	Royalties																		
1930-31	\$ 66,225.59	\$ 105,126.51	\$ 5,103.58	\$ 5,014.29	\$ 87,373.46	\$ 110,882.84	\$ 8,990.72	\$ 262.94					\$ 424.12		\$ 55.00	\$ 131.94					\$ 10.00		\$ 26.90		\$ 1,799.50		\$ 372,055.86	\$ 19,371.53	\$ 391,427.39	1930-31
1931-32	132,415.11	145,170.33	5,788.21	6,354.09	57,868.87	106,103.05	8,455.94	383.60					2,155.37		214.38	588.23		\$ 205.00		50.00		49.80		1,228.20		446,048.34	20,981.84	467,030.18	1931-32	
1932-33	125,750.49	143,800.01	6,110.57	4,971.78	42,117.70	73,182.96	3,718.94	253.46					1,032.22		243.60	262.18		370.00		82.50				224.56		387,066.22	15,054.75	402,120.97	1932-33	
1933-34	120,977.90	193,527.82	5,463.01	9,520.13	81,540.10	73,548.27	12,099.71	333.64					1,727.87		214.38	374.90		230.00		294.50	\$ 30.00			373.48		472,809.22	27,446.49	500,255.71	1933-34	
1934-35	128,482.81	176,122.43	5,310.92	12,365.39	104,375.89	61,265.88	13,630.73	283.08					1,206.38		541.00	365.97	\$ 34.92			100.00	10.00			183.57		472,893.93	31,635.04	504,528.97	1934-35	
1935-36	117,741.55	186,691.23	5,398.41	19,779.76	115,593.55	117,468.36	10,875.87	699.33	\$ 699.96				1,201.94	\$ 209.00	535.00	734.07	41.80	2,105.00		95.88	10.00		36.60	42.99		543,154.83	36,805.17	579,960.00	1935-36	
1936-37	116,137.98	175,214.33	5,214.63	18,596.00	348,291.29	108,321.19	89,040.20	614.09	646.90	\$ 62.00			1,998.98	188.00	399.80	344.58	93.00	340.00		105.66			275.00	\$ 14.00	279.15	\$ 14.00	752,603.96	113,571.92	866,175.88	1936-37
1937-38	114,984.69	158,227.11	4,824.02	15,159.15	284,844.04	249,266.53	35,355.10	24,257.57	511.10	10.50			1,577.94	790.16	200.00	942.90	167.75	233.53		55.04			1,877.07		304.37		813,824.98	79,763.59	893,588.57	1937-38
1938-39	106,765.27	143,070.78	4,665.98	9,275.23	372,449.99	394,453.43	40,735.42	128,312.33	32.68	995.21			1,471.94	1,133.65	485.00	669.62	109.80	98.17		198.27			5,804.70		151.01		1,027,779.72	183,095.56	1,210,875.28	1938-39
1939-40	111,287.05	168,802.75	4,900.47	7,812.78	340,687.68	408,304.20	37,117.62	115,002.11	32.56	540.22			1,335.15	1,213.75		3,003.43	68.00	83.48		205.63			7,973.70		488.43		1,043,958.03	164,900.98	1,208,859.01	1939-40
1940-41	85,445.98	200,945.68	4,191.79	15,841.24	229,844.78	411,963.65	36,296.74	111,371.14	57.56	2,120.10			1,253.95	996.62	135.00	3,694.63	129.25	132.72	\$ 10.00	366.20	20.00		3,986.85		86.08		940,129.80	167,860.16	1,107,989.96	1940-41
1941-42	80,560.44	216,777.95	4,269.87	22,849.83	189,436.95	570,604.94	25,382.21	88,293.81	43.50	3,711.16			1,412.99	1,523.48		1,975.10	170.20	246.72		187.98	60.00		1,806.00		329.93		1,068,617.14	141,025.92	1,209,643.06	1941-42
1942-43	79,742.23	235,613.19	4,288.14	24,700.43	267,612.47	575,833.12	24,065.16	54,360.45	27,186.60	4,247.87			1,283.73	1,926.50		6,597.40	447.60	313.83		190.00			5,655.30		5,020.07		1,211,222.31	107,861.78	1,319,084.09	1942-43
1943-44	88,289.67	239,590.96	5,071.19	19,732.99	239,584.05	503,525.82	16,747.75	46,862.33	13,441.64	3,379.66			1,516.68	3,718.90		5,471.40	358.00	196.22		140.00			5,693.05		4,693.05		1,107,382.45	88,772.26	1,196,154.71	1943-44
1944-45	113,870.87	251,136.50	4,329.90	22,094.01	598,352.20	669,230.07	62,678.16	38,968.00	7,365.82	5,543.21	\$ 1,300.00		1,476.98	6,558.40		1,823.45	162.00	10.00					5,620.91		3,620.91		1,658,998.41	129,557.80	1,788,556.21	1944-45
1945-46	150,476.68	260,144.66	4,021.68	27,514.41	552,651.07	550,340.47	22,980.58	38,577.04	8,220.82	5,791.70			1,506.71	6,021.40		1,490.65	25.00	8.52		70.00	20.00		14,545.37		1,223.47		1,354,903.98	94,362.18	1,449,266.16	1945-46
1946-47	108,017.04	286,486.89	4,106.73	30,611.98	272,342.03	556,230.33	15,412.02	73,978.60	6,745.82	6,332.00	Dr. 1,290.00		1,501.09	4,466.65	2,805.00	4,067.60	226.35	66.94			12.83		6,302.94		4,724.28		1,240,101.44	123,055.68	1,363,157.12	1946-47
Totals	\$1,847,171.35	\$3,285,549.13	\$ 83,059.10	\$ 272,188.49	\$3,984,966.12	\$5,520,525.11	\$ 463,582.87	\$ 722,813.52	\$ 64,984.66	\$ 20,609.93	\$ 10.00		\$ 24,083.14	\$ 28,746.51	\$ 5,828.16	\$ 32,538.05	\$ 2,033.67	\$ 4,890.13	\$ 10.00	\$ 2,174.49	\$ 160.00		\$ 52,174.63	\$ 1,251.00	\$ 27,185.51	\$ 14.00	\$14,913,550.62	\$1,545,122.65	\$16,458,673.27	Totals



Registration Division

REPORT OF THE REGISTRAR, C. B. KENWAY

The past year has been one of the busiest and probably one of the most abnormal years in the history of the Department, and of this Division in particular. The branch's smooth and evenly balanced operations of the previous year suffered from the avalanche of mail that "hit" the Department in three pulsating waves at three to four month intervals. Although the filing and record sections, through their greater flexibility, were able to cope with the volume, the stenographic pool was unable to do so well, for reasons which will be mentioned later.

The numbers of letters received and mailed for the past year are compared with those of the previous year in Table 1.

TABLE 1

Month	Letters Received		Letters Mailed		Total	
	1945-46	1946-47	1945-46	1946-47	1945-46	1946-47
April	20,032	19,722	21,797	27,701	41,829	47,423
May	14,944	23,142	17,213	27,740	32,157	50,882
June	16,683	25,095	19,606	25,960	36,289	51,055
July	15,735	36,405	16,271	22,377	32,006	58,782
August	15,011	19,957	36,648	23,290	51,659	43,247
September	14,606	15,748	38,449	56,074	53,055	71,822
October	14,225	18,404	26,783	49,093	41,008	67,497
November	15,637	31,406	25,988	21,193	41,625	52,599
December	17,416	16,107	23,184	25,372	40,600	41,479
January	16,242	19,841	39,770	28,595	56,012	48,436
February	15,159	28,544	33,353	34,206	48,512	62,750
March	33,255	19,648	29,652	36,611	62,907	56,259
Total.....	208,945	274,019	328,714	378,212	537,659	652,231
Monthly Av.	17,412	22,835	27,393	31,518	44,805	54,353

To obtain a better understanding of the abnormal situation, undoubtedly caused by post-war conditions, the reader is referred to the graph on the opposite page. Depicted there are the curves for incoming mail for the two previous years and the year under discussion. The two lower curves are very similar in appearance and give a fairly good idea of the normal trend of business transacted within the Department. With the exception of the month of March, when the incoming mail reaches a peak before the close of the fiscal year, these two curves fall roughly within the 12,000 to 18,000 pieces of mail per month range, with the year 1945-46 showing a little greater volume than the year immediately preceding it. The curves do not show excessive monthly variations, and are reasonably flat, with the exception of March as already pointed out. Earlier years show less volume and less percentage variation.

On the other hand, if you will follow the heavy black curve for the past year, one cannot help being impressed by the greater volume and lack of adherence to the normal trend. If one will try to interpret the graph in the terms of, or visualize the effect these conditions had on, human relations and effort of a staff normally equipped to handle conditions entirely dissimilar, a fair idea of what happened can be pictured. As far as this branch was concerned the situation was more or less as follows:

The Records section had no great difficulty in handling the erratic volume, as they had little need to call for files, and on making the entries in the records the files were immediately released. Transcription of records was stopped when the volume demanded, and the transcribers helped on entries and returned to their transcribing on completion of the entries.

In the case of the Filing section, similar tactics were applied—girls were shifted to those phases of the work where most needed. The meagre return of files listed on the daily search list created a larger number of searches and a larger number of persons searching. Except in the matter of search lists and green slips, this section was able to handle the large volume of mail without a great deal of difficulty, but naturally it required much more effort.

In regard to the stenographic pool an entirely different situation arose. In common with the rest of the Department, there were many staff changes in the pool, which naturally retarded production. The situation was further aggravated by the inability of the Civil Service Commissioner's Office to provide stenographers, whether competent or not. As most branches found themselves in the same stenographic predicament, it was natural that they turned to the pool for assistance; with the result that branch competed with branch and individual with individual. In many occasions there were only four or five overworked floaters (out of a pool of nearly thirty) to meet all the demands, and consequently assistance could not be provided when the incoming mail reached the peaks as shown by the curve.

To the writer, who plotted the incoming and outgoing mail each month, it was fairly evident that the distribution and volume were abnormal and that it would revert to a normal, but not necessarily the same pattern as previously.

RECORDS

On several occasions the question has arisen as to the amount of recording done in the township registers from files passing through the Records section of this division. As far as could be determined no check had ever been done before, because of the amount of work entailed in keeping track of the actual number of entries. However, as it was a comparatively simple matter to keep a record of the number of files being entered each day, this was done for a period of three months (January 1st to March 31st) with the following results:

A—General Land	6,125
B—School Land	2,907
C—Receipts checked	933
D—Timber Land	800
E—Grazing Land	446
F—Notifications checked	392
G—Revested, Mines and Minerals only	58
H—Mining Land	37
I—Right of Entry	22
J—Roadways	12
K—Registering of Assignments (School and Provincial)	134
L—Memorandum re Standing of Lands (in addition to those listed in A to K above)	43
Total	11,909

The above gives a good picture of the proportion of files handled, and a fairly reasonable idea of the entries made. In the latter case it must always be kept in mind that each grazing or timber file usually involves a number of entries, and sometimes a great number.

During the past year, a sixteen of the old Dominion township registers were transcribed to loose-leaf registers. There are twenty-three registers in the Edmonton District still to be transcribed, but as nineteen of these are north of township 77 and seldom used, there are only four needing immediate transcription. In the Calgary and Peace River Districts there are still sixty-eight books to be transcribed, but as many of these are in unsurveyed territory, and in excellent condition, the number needing transcription is small.

Carelessness in the handling of township registers has caused needless transcribing and becomes particularly annoying in the case of newly transcribed registers.

FILING

Increased activities throughout the Department naturally increased the amount of work done by the filing section of this Division. This was most noticeable in the work involving the Lands and Timber branches. Although there were larger numbers of new files opened, there was not as great a percentage increase in new files opened as in the previous year, even though the amount of mail received was 30 per cent greater.

A comparison of the new files opened for the past and previous years is shown in Table 2.

TABLE 2
NEW FILES OPENED FOR THE YEARS 1945-46 AND 1946-47 WITH THE TOTAL
NUMBER OF FILES AS AT MARCH 31, 1947

Kind of File	1945-46	1946-47	Total
General Lands	3,690	3,953	108,071
Lands Personal	1,292	988	2,539
Grazing Lands	396	350	9,943
School Lands	486	701	13,387
Right of Entry	37	34	131
Cabin Files	324	141	465
Timber Lands	842	1,150	10,092
Timber, Personal	1,604	1,630	4,508
Mining Lands	1,231	1,220	39,460
Mining Land (SL)	8	13	3,205
M.L. License Files	21	15	91
M.L. Company Files	18	6	999
M.L. General	16	13	43
M.L. Inc. Tax .....	.....	5	5
Total	9,965	10,219	193,927

The task of changing the Kardex over to the new cards received a set-back partially due to a fire which destroyed a number of cards, and consequently considerable time was lost in the collection of the material for retyping; and partially to increased routine activities. It has progressed favourably but slowly.

Plot books and file record books are in poor condition, particularly the latter, which should be transcribed immediately to loose-leaf binders.

There were 199 films exposed and checked by one Recordak operator in the photographing of files. This is an excellent "batting average" for one person on this work.

One of the most pleasurable or gratifying aspects of the past year revolved around the short course on job instruction training which the Minister arranged for a limited number of the staff. Although the course was extremely short, its value only became apparent upon its application.

That we were able to apply any of its principles in a small way in the filing section, against the volume of work, was primarily due to the interest of Mr. Bone, the chief filing clerk. The author was only able to attend a lecture and a half, but having just the previous winter been fortunate enough to attend a course of night lectures at the University along similar lines, the lecture and a half was sufficient to know that it could be applied with value within the branch. It was fortunate, also, that Mr. Bone during the same period had been doing some home studying on a different but similar course. Otherwise it is doubtful that we would have decided, in view of the pressure of work, to take sufficient time to implement some of the ideas derived from the course.

For years, it has been the contention of the author that regardless of fine buildings and equipment, the largest and most important element of an organization is the staff. Any effort that might be expended on their selection, training and welfare would be more than amply repaid by the type and quality of service rendered. That we are far behind the "better" business firms in the case of our staff goes without question. The results of what little training we have done bears this out. Fewer mistakes have occurred, more harmonious relations arisen, better

and more productive work has been done, but above all the "cog in the machine" has become a human being with unknown useful qualities brought to light and weaknesses shown that can be used or guarded against. The writer sincerely regrets that the extraneous duties that have been placed upon him has delayed a course of procedure that has been self-evident since joining the Department.

It is fervently hoped that circumstances do not arise that will interfere with what looks like the beginnings of not only job instruction, but personnel training.

As mentioned last year, the writer has not been able to give the supervision to the work of the Division to the extent to which he would like because of other special duties assigned to him. That he was able to spend this time on other duties has been due to the co-operation and loyalty of the staff, for which he is more than extremely grateful.

Special Areas Administration

A fairly successful year was experienced in the Special Areas. Farm crops were about average for the district, and the prices for grain and live stock fairly good.

The late summer rains caused a considerable loss to some farmers who had difficulty getting their crops harvested. The excessive dry spell in July cut the crop to some extent, and the result was a light yield for the amount of straw produced. The feed supply was ample to carry all stock throughout the winter months, notwithstanding the fact that the cold winter set in about the middle of November and continued until late in March.

The residents of the Areas are continuing to take advantage of the policies of the Board and applications for reinstatement of title, exchange of land, re-grassing, compromise settlements of feed and agricultural advances have been dealt with to the benefit of the Areas in general.

The Bartman Irrigation Project was only partially successful this year owing to the lack of water in the dam. Snow in this district in the winter of 1945-46 was very light, resulting in no runoff, consequently a considerable amount of the land cultivated was summerfallowed, the balance being used to grow feed. We fully expect this project to operate during 1947, owing to the excessive moisture condition in the fall of 1946 and the heavy snowfall this winter, the Bartman Dam should be full to capacity.

It might be mentioned that there are quite a number of small irrigation projects being operated by private owners by pumping water from the Red Deer River or dams and dugouts throughout the Areas.

Under our regrassing policy there were 24,678 pounds of Crested Wheat Grass seed distributed to 147 farmers and 5,466 pounds of Brome Grass seed distributed to 37 farmers. Total distribution, 30,145 to 184 farmers.

Grazing Leases

There were 297 long term Grazing Leases issued, 85 additional recommended by the Board and forwarded to the Department of Lands and Mines. Total leases in effect, 1,339.

Cultivation Leases

There were 259 Cultivation and Grazing Leases (six and twenty years) issued for the period.

Statement of Permits Issued

Grazing Permits on Provincial Lands: Number issued, 929; area, 483,602 acres.

Grazing Permits on School Lands: Number issued, 446; area, 212,770 acres.

Cultivation and Grazing Permits: Number issued, 483; cultivated area, 125,730 acres; unbroken area, 41,295 acres.

Hay Permits: Number, 92; Feed Permits, 125.

REPORT ON HEAD TAX PASTURES

Name	Cattle	Horses	Receipts	Expenditures	Balance	Area
Bull Pound	894	75	\$ 1,732.63	\$1,035.00	\$ 697.63	24,960
Remount	1,199	123	2,635.95	1,575.16	1,060.79	51,200
Buffalo-Atlee	1,019	100	2,197.20	1,471.00	726.20	54,290
Sounding Creek	1,313	63	2,073.80	1,127.45	946.35	44,160
Lomond	1,417	63	3,074.60	1,341.83	1,732.77	53,760
Totals.....	5,842	429	\$11,714.18	\$6,550.14	\$5,163.74	228,270

ROAD CONSTRUCTION

Miles of high grade road built	100
Miles of heavy blade grade	327
Miles of road crowned	16
Total miles of grading	<u>443</u>

E.L.D.

In addition to the above, 44 miles of gravelling was completed, and the usual patrol and maintaining work was done. An expenditure of \$22,538.30 was made for work done by residents on local roads. A crew was kept working all summer installing bridges and culverts, repairing others as required.

The Areas have procured a drill hall from War Assets Corporation for use as a machine shop. This building has been moved from its original location at DeWinton to Youngstown, and is now in process of reconstruction. It will be thoroughly modernized as a machine shop, carpenter shop, paint shop, wash room and stock room. Our machinery requirements now having reached the proportions of making a building equipped with modern tools a necessity for the purpose of keeping the machines in operation.

Our units of road construction machinery were increased during the year by the addition of several machines, including 1D-8 Diesel Cat Tractor, 1 complete Power Saw, 1 Allis Chalmers Speed Patrol, 1 D-7 Diesel Cat Tractor with Bulldozer and cable control unit, 1 D-4 Cat Tractor, 1 Model L.S. Letourneau Scraper with control unit, 1 20-ton Gardner Trailer, 3 G.M.C. 3-ton used Trucks with dump boxes, Bunk Car and Cook Car units necessary for use with the additional machinery, were built at our shops at Youngstown.

The remodelling and reconditioning of the Agricultural Building at Youngstown as a Home for the Aged is being proceeded with as rapidly as possible. It is intended that this building will be completed as a modern up-to-date home to house comfortably 75 to 80 old people, with sleeping, eating and recreation quarters. Staff buildings are under preparation and the heating plant is undergoing a complete overhaul. There is a vast amount of work here to be undertaken, as this building has been idle for over twenty years. Other buildings in connection with the farm will be repaired and put to use.

